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NEGOTIATING HOUSEHOLD QUALITY OF LIFE AND SOCIAL COHESION AT UCANHA, YUCATAN, MEXICO, DURING THE LATE PRECLASSIC TO EARLY CLASSIC TRANSITION

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DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Arts and Sciences at the University of Kentucky

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ABSTRACT OF DISSERTATION

NEGOTIATING HOUSEHOLD QUALITY OF LIFE AND SOCIAL COHESION AT UCANHA, YUCATAN, MEXICO, DURING THE LATE PRECLASSIC TO EARLY CLASSIC TRANSITION

The main focus of this project is to chronicle whether or not social inequality increased among households and community-level interactions in Ucanha, Yucatan, Mexico, at the time it was physically integrated with a larger regional polity headed by Ucí around the Terminal Preclassic/Early Classic (50 BCE – CE 400) transition. My research seeks to identify how social distinctions emerged during the early moments of social inequality and how these distinctions did or did not become a threat to social cohesion, as seen in the Early Classic "collapse" in some areas. Using a relational theoretical perspective, I argue that political authority and economic practices are embedded in moral expectations of a household quality of life that is negotiated by all actors. Trenching and broad-scale horizontal excavations document five variables of social distinction—architectural energetics, feasting, diversity of household assemblage, caching/burial practices, and the use of space—at three dwellings. Gini scores that calculate the distribution of fancy ceramics and labor investments in architecture also contribute to measuring household wellbeing at Ucanha. Results highlight differential, yet relatively high, quality of life during the Late Preclassic and then greater inequality and an overall decreased quality of life by the middle of the Early Classic (CE 400/450 – 600). Excavations from contexts associated with monumental architecture indicate vast labor inputs into Ucanha's built landscape around the time of broader regional integration. Excavations and multi-elemental chemical analyses from the Central Plaza suggest this large public space was built during the Late Preclassic and was used for a variety of rituals that incorporated the populace through processions and performances. By the first few centuries into the Early Classic, however, the Central Plaza was walled off and access became limited and more tightly controlled. Thus, it appears emergent leaders at Ucanha, as evidenced by the presence of iconography related to centralized decision-making and possibly kingship, were successful in providing a high quality of life for their citizenry in exchange for labor and devoted followers during regional integration. Yet, during the Early Classic, household quality of life diminished, access to fancy ceramics became highly curtailed, and many residential platforms were abandoned likely as a result of leaders failing to meet the expectations of their followers.

KEYWORDS: Prehistoric Economy, Households, Quality of Life, Maya Archaeology, Social Differentiation

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May 3, 2019

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inquisitive son, Wilkes, for always putting a smile on my face no matter the depths of despair and worthlessness that are a part of this trek towards a doctoral degree. To the all of the unnamed family, friends, and colleagues along the way, I thank you for numerous acts of support, conversation, and companionship.

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The main focus of this project is to chronicle whether or not social inequality increased among households and community-level interactions in Ucanha, Yucatan, Mexico at the time it was physically integrated with a larger regional polity headed by Ucí around the Terminal Preclassic/Early Classic (100 BCE – 400 CE) transition. This archaeological research, which is part of a broader investigation called the Ucí-Cansahcab Regional Integration Project (UCRIP), will explore how social distinctions among households were negotiated vis-à-vis the rise of social complexity, and how variables of social distinction did or did not change through the process of microregional integration. "Negotiating social distinction" refers to the processes of give and take among people that create and keep in check relationships of power, identity, and meaning. From a relational perspective, I propose these social distinctions were restricted by a balance of historically and morally embedded political-economic practices and an expectation of a certain quality of life at the household level for all members of Ucanha.

Ucanha provides an ideal location to explore changes in household variation because by the Terminal Preclassic it was physically integrated with three other large sites via an 18 km-long causeway system, which may have brought new economic, ritual, and political practices to the communities and households that it connected (Figure 1.1).

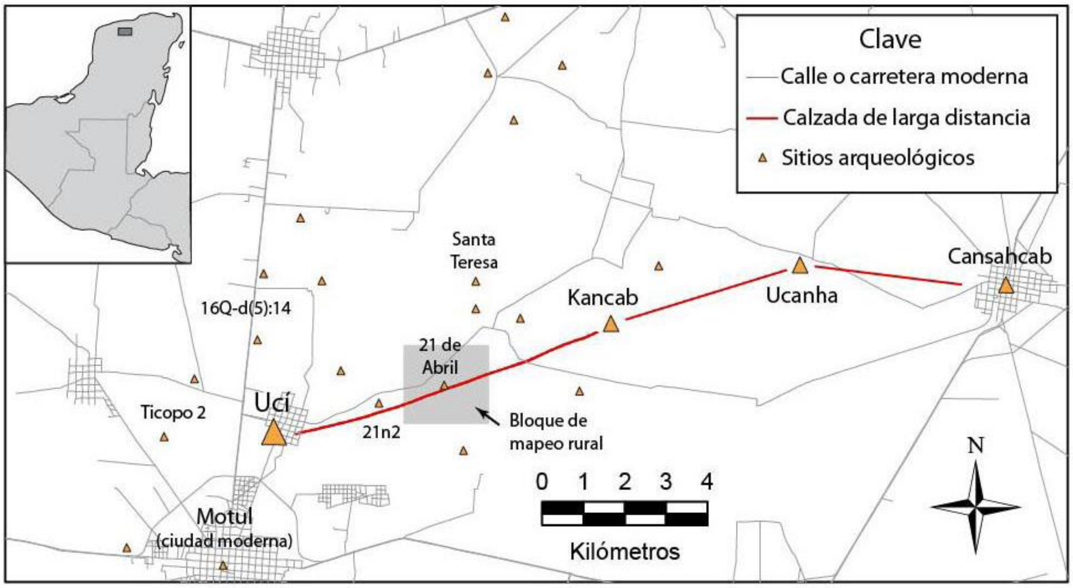

Figure 1.1. A map of the project area showing the intersite causeway in red and the four major sites on the causeway.

Pedestrian and LiDAR surveys in conjunction with surface collections and test excavations indicate Ucanha is the second largest site along the causeway. By the end of the Preclassic, multiple monumental buildings were constructed (Kidder et al. 2014), the site reached a population apex, and residential compounds consumed diverse household ceramics, all of which attest to the communal prosperity of the site (Smith 2015). The rise of Ucí as the local capital by the Terminal Preclassic (Kurjack and Andrews 1976; Maldonado 1979, 1995), nevertheless, expanded the scale of political economic interactions and provided new ways for people to express social differentiation. More broadly, during the Preclassic-Classic transition there is evidence for a "collapse" of many sites in the Northern Lowlands (Glover and Stanton 2010; Forsyth 1983). On the other hand, larger sites near Ucanha that share a similar megalithic architectural style and are also located on intersite causeways, such as Ucí, Izamal, and Aké, experienced a florescence (Hutson 2012; Maldonado 1979, 1995; Roys and Shook 1966). While the relationship between households, quality of life, and political (in)stability has been well-documented during the Late Classic (Ashmore et al. 2004; Golden and Scherer 2013; Inomata 2004; Robin et al. 2012; Yaeger and Robin 2004), this relationship is understudied in the Terminal Preclassic and Early Classic in the Northern Lowlands (Bey 2006; Braswell 2012). Given the low amount of household data from this time period and how households' practices relate to larger community success or failure, I will gather data on this transitional period to specifically explore the following questions**:**

(1) What was the degree of social distinction among households from the latter half of the Preclassic to the beginning of the Early Classic?

(2) Were community-level interactions that helped build social cohesion during these two periods present? If so, did they change?

In order to address these questions, I excavated three architectural compounds, gathered artifacts and geochemical samples from across the Central Plaza, and analyzed associated archaeological remains. By analyzing five variables of social distinction—architectural energetics, feasts, household assemblages, caching/burial rituals, and the use of space—I will measure social inequality and quality of life among households at Ucanha from the Late Preclassic to the Early Classic. These variables also can involve horizontal bonds and vertical inequalities, thereby bringing people together yet simultaneously pushing them apart. This study will address these questions from the perspective of elite and nonelite households through broad-scale excavations, spatial statistics in conjunction with soil chemistry, and analyses of archaeological materials from household and plaza contexts at Ucanha.

At the core of this dissertation is how collections of people simultaneously portray social differences while managing some degree of acceptable wellbeing. During the Late

Preclassic in the Northern Lowlands, the built environment at many sites indeed had significant labor inputs well beyond the household level; however, these constructions (at least overtly) did not reference individuals but were raised through an appeal to community pride and collective wellbeing. In the Late Preclassic period, over two hundred households congregated in an area of about 2 km^2. Around Ucanha, the relative ecological homogeneity would not facilitate a resource-claim and circumscription model, so a more convincing argument would be that people congregated at Ucanha because they that the benefits of living in a densely populated settlement would outweigh the benefits of living in dispersed farmsteads. It is unlikely that people were coerced into settling at Ucanha. With little material precedence for acceptable or intelligible citations of social distinction prior to the Late Preclassic, there would be more structural "play" for materializing social distinction—which becomes readily present with the emergence of the megalithic architectural style and aesthetically-charged Protoclassic ceramics—and the social processes for negotiating the acceptance/rejection of high levels of inequality. Thus, households gathered at Ucanha for access to material resources but also non-material resources such as more intimate access to the supernatural as it was channeled through the built landscape, and a sense of community bolstered by ritual processions along a series of causeways. Yet, with an impressive built landscape and social differentiation comes the ability of elite people to coopt these material/non-material networks for more individual gains (e.g, Pauketat 2000). By tacking between household assemblages and monumental spaces, this dissertation seeks to see whether or not changes in material and social networks threatened community cohesion.

Organization of the Dissertation

Chapter two outlines a conceptual framework that draws from ideas of relational archaeology wherein historical structures and agency are distributed through a network of interrelated and interactive human and nonhuman agents. It is through this interwoven network that people cite a proper way of being, both through embodied knowledge and discursive projections. In this formulation power is also distributed thereby allowing for negotiation of expected household wellbeing and community prosperity in ways that uphold moral authority. The idea of moral authority argues the constitution of political institutions is built upon a reciprocal relation between followers as provides of labor and/or tribute and rulers as provides of household wellbeing and community integration through interactive rituals that forge a sense of generalized trust throughout the populace. Thus, there is a balancing act between emerging materializations of social differentiation and an appeal to a community ethos and overall wellbeing for the citizenry.

With concepts of citationality and the moral and historical underpinnings of economic practices and subjectification in place, I then argue household quality of life and community prosperity must be considered when analyzing social distinctions. Since households influence the broader political success of a community, inter-household inequalities, which can accompany broader political-economic changes, can be a point of tension that threatens community success. Next, I present five variables—1) architecture, 2) feasting, 3) diversity of household assemblages, 4) caching/burial rituals, and the 5) use of space—in order to chronicle social distinction vis-à-vis quality of life at the household level. Recent studies on quantifying inequality in the past opine constructing Gini coefficients is a promising baseline for quantifying and comparing household quality of life (Betzenhauser 2018; Feinman et al. 2018; Oka et al. 2018; Peterson and Drennan 2018; Smith et al. 2018); therefore, these concepts and methods will be presented as a means to analyze social distinction. Finally, chapter two concludes with how community-level interactions can reinforce or undermine claims of moral authority and subsequent effects on social cohesion.

Chapter three chronologically situates broader cultural and material trends of the transition from the Preclassic to the Classic with a focus on the Northern Maya Lowlands. It is during this time that practices of social differentiation, both regionally and locally, paradoxically seek to continue an appeal to a communal ideology while households strive to promote their own wellbeing perhaps at the expense of others. This transitional period is a time of demographic change, ceramic experimentation, new architectural styles, and more hierarchical materializations of political authority, and Ucanha, likewise, undergoes many changes during this period.

First, this chapter describes local environmental resources since such resources can be an important component of social differentiation and how households control certain resources in order to promote their quality of life. Then a description of Preclassic households, most notably from Komchen, a site of roughly equal population to Ucanha during this period, is presented as a baseline for social distinction. Since ceramics are one of the most important materializations of social differentiation at Ucanha and provide insights into household quality of life, an in-depth discussion of Protoclassic ceramics is included in order to chronologically situate this transition and to highlight how new aesthetic embellishments were ubiquitous "in a social environment marked by increasing stratification" (Glover and Stanton 2010:72). Next, I define the megalithic style and its distribution across the Northern Lowlands since architectural investment and the social networks needed to procure, move, and erect these stones are another important variable of social differentiation and quantifying household quality of life. While megalithic architecture is reserved for more elite structures at larger sites in the eastern part of the Northern Lowlands, in the greater Ucanha region, this style is present at all levels of settlements in the Ucí area, suggesting this style was an important component of regional identity. Finally, I outline the various types of causeways and their functions because causeways were a major feature on the lived landscape of Ucanha during the Late Preclassic and into subsequent time periods. Not only did an 18 km-long causeway regionally integrate Ucanha with the larger site of Ucí, but intrasite causeways at Ucanha also integrated people at the community level by channeling people to the Central Plaza and expressing a common spatial trope of the quadripartite cosmos were the universe began.

Chapter four begins by discussing the background of Ucanha's physical integration with three other sites via a long-distance causeway during the end of the Preclassic period. LiDAR and survey data from UCRIP suggest Ucí and Ucanha were two emerging micro-polities during the Late Preclassic with this causeway being constructed in three stages, the last of which joined a buffer zone between these two sites after Ucí emerged as the regional polity head. Next, I present survey and mapping data for over 200 ha at Ucanha in which roughly 300 architectural compounds were identified. Histograms indicate the presence megalithic architecture positively correlates with greater architectural volume, which as a proxy for labor investment, is envisioned as a variable of social differentiation. Total station mapping of monumental architecture and a karst depression, which is a potential ecological feature, are also noted. Finally, I present some possible centripetal forces that brought people to Ucanha during its demographic apogee in the Late Preclassic. Reviewing social, monumental, and ecological features that might have facilitated this negotiated process of cohesion is imperative since investigating social cohesion and the success of community-wide prosperity is a major goal of this dissertation.

Chapter five presents findings from an extensive test pitting program around monumental architecture and residential architectural compounds. Test pitting of the Central Plaza is briefly mentioned; however, these results are more thoroughly presented in the next chapter, which deals specifically with the Central Plaza as a place of community formation and arena of negotiation. Additionally, two trenches were placed across the intersite causeway to the east and west of Ucanha in hopes of getting finer chronological resolution on the timing of regional integration. Ceramics recovered from under plaster floors around monumental architecture indicate the majority of Ucanha's built landscape was in place during or shortly after the time of its integration with Ucí. Since identifying citations of social distinction and the negotiation of quality of life at the household level are important goals of this project, variables of differentiation (e.g., architectural volume, diversity of possessions, etc.) are presented for each residential compound that was test pitted. These test pits confirm other regional trends of a Late Preclassic population boom, an Early Classic decline, and a resurgence during the Late Classic. The chapter concludes by highlighting some patterns of household diversity during the Late Preclassic and Early Classic. Overall, quality of life seems relatively high during the Late Preclassic yet diminishes by the first few centuries of the Early Classic.

In Chapter six I discuss how the Central Plaza was an arena of community integration wherein people cooperated to construct the landscape as well as witnessed and participated in performances in which claims of authority were likely affirmed, contested, and questioned. The chapter begins with a brief theoretical section on the sociality of plazas and how they were key places of subject formation and nodes of centripetal forces that drew in an otherwise dispersed settlement pattern. I then present how the physicality of plazas as monumental constructions, in and of themselves, helped the process of integration and how questions of access to these spaces by different members of society can change over time. Next, I chronologically situate construction episodes of the Central Plaza as evinced by ceramics and radiocarbon dates from below plaster floors. As seen from other excavations around monumental architecture, considerable labor went into leveling and plastering floors during the Preclassic. A wall around the southern boundary was also excavated in order to ascertain how control of this space changed diachronically; results suggest during the end of the Preclassic this wall was built to limit access to the Central Plaza. Also during this time period, Structure 149, which is situated at the northern boundary of the plaza immediately adjacent to an intrasite causeway that runs to the tallest pyramid in the northern part of Ucanha, was erected. This building had a Late Preclassic plastered megalithic staircase and a large stucco deposit was interred inside this building possibly as a source of nutrients that marked this structure as a living earth monster mountain or *witz*. Finally, since plazas were frequently swept clean, I collected plaster floor samples from the upper three floors which were then sent away for ICP-MS analysis so that I could analyze how the use of space and practices of community (dis)integration unfolded across time and space.

Chapter seven chronicles excavation results of broad-scale exposures at three different residential platforms (Structures 65, 132, and 239). All three platforms exhibit evidence for significant construction during the Late Preclassic. However, access to Terminal Preclassic ceramics, both locally and further afield, are not equal suggesting there is some variation of quality of life amongst households. This variation is further manifested by differential access to Terminal Preclassic redwares, labor mobilization, and feasts. For example, Str. 239 shows evidence of relatively robust feasts as seen in the presence of a thick ash deposit associated with a large oven, numerous well-preserved sherds of large and small serving vessels, and an assemblage of faunal remains. On the other end of the spectrum, the household at Str. 132 had a more circumscribed assemblage of Terminal Preclassic bichromes and redwares and no access to imported fancy ceramics during this period. Indeed, this platform was abandoned shortly into the Early Classic, while the other two households weathered the tide and had robust Late Classic occupations.

In chapter eight I discuss how social differentiation among households during the Terminal Preclassic occurred in subtle ways that were likely guided by an appeal to collectivism. Larger dwellings and smaller dwellings were somewhat equally dispersed throughout the settlement arguing against a concentric zonation model; I argue these intermixed displays of wealth were possibly the result of strategies similar to New Urbanism wherein facilitating interactions between differentially situated social actors can build trust. Using Gini scores from architectural volume and surface area coupled with Gini scores from the equity of distribution of fancy bichrome ceramics, I calculate a Composite Archaeological Inequality (CAI) index (see Oka et al. 2018) for Ucanha during the Terminal Preclassic. Comparing this CAI index with other sites from the Old World and New World, Ucanha is classified as utilizing an “intermediate” regime-building, transiting from a collective regime to a more autocratic one. The presence of architecture associated with kingship or centralized authority, such as stucco masks and the mat motif, supports this categorization. Additionally, I discuss how feasting at Str. 239 during the Terminal Preclassic can be envisioned as a collective work exchange where hosts exert social distinction through “covert corveés” by utilizing aesthetically-charged ceramics common to many households yet do so on a scale and with food choices that would have been unrepayable by attendees.

Continuing in Chapter 8, on the community-level I discuss how labor investments in Ucanha’s monumental landscape (i.e., plazas, roads, and pyramids) would have harnessed an appeal to civic pride and an ontology of work in ways that meaningfully engaged the populace. While these labor efforts can be memorialized through the materialization of these products, these memories are fleeting and unfocused; therefore, I argue maintenance of these monuments would have helped reinvigorate ideas of civic pride. During the Terminal Preclassic, I also suggest households were provisioned with bichromes, specifically from the group Shangurro, through small-scale marketplace exchange. Not only did this exchange provide quality of as wealth, it also provided households with new capabilities afforded by the social nature of the marketplace. By the Early Classic, however, polychromes are introduced, and their distribution becomes more circumscribed, hinting at changes in economic systems that foster eliteness over collective wellbeing. Finally, I present ceramic evidence from a plazuela group (Op. 8), which is located a mere 50 m from the tallest pyramid at Ucanha, that suggests this area was a place where an elite household furthered their claims of vertical distinctions by hosting other elite guests. Thus, at the community level of Ucanha during the Preclassic to Classic transition, there are appeals to a communal ethos—via performative processions and the relatively even consumption of fancy bichrome ceramics and lack of prestige goods—while elite statements of authority and access to new wealth statements threaten social cohesion.

In chapter nine, I present conclusions and further directions for analyzing household quality of life and social differentiation. Furthermore, I argue looking to past negotiations of social inequity and community belonging has important implications for current rhetoric surrounding politics. The ability of nonelite actors to shape—not merely be passively impacted by—local elite institutions must be considered in future studies of the development of social inequality. Current political and economic studies show that pronounced social inequality not only undermines trust, it also threatens governing bodies and civic engagement (Deneulin and McGregor 2010; Uslaner 2000). Archaeology can meaningfully add to these current conversations because it provides rich data sets of long-term change on how people negotiate, successfully and unsuccessfully, power dynamics (Smith 2015). Now, just as in the past, we must approach social inequality from a relational perspective to more fully comprehend the constellation of wants and needs at play and how authority as well as household standard of living is a give and take between all actors.

CHAPTER 2: A RELATIONAL FRAMEWORK TOWARDS ASSESSING QUALITY OF LIFE AND VARIABLES OF SOCIAL DISTINCTION

> "The outcome of the negotiation of power may bolster the social position of nobles, but it usually does so in ways that reflect some degree of compromise resulting from the interactions of varied social actors." –Arthur Joyce (2008:223)

In this chapter, I outline my conceptual framework, which draws on ideas from relational archaeology, in order to assess how social cohesion and wellbeing are influenced by a web of interactions between humans and material culture. Recent contributions to social archaeology have stressed the importance of approaching the past from a relational perspective, which argues that all agents—both human and nonhuman—are active participants in the formation of social identity and political, economic, and religious practices (Hendon 2010; Hutson 2010, 2013a; Latour 2005; Meskell and Preucel 2004; Preucel and Bauer 2001). This relational model argues authority is constantly in flux and is a product of ruler and follower negotiations; the present is rooted in past expectations and practices and guides, but does not predetermine, future action; and power is a dispersed process through which people and things constitute one another as intelligible social beings (Bourdieu 1977; Butler 1997; Pauketat 2001; Sewell 1992; Taylor 1999; Thomas 2002). In this view, political authority at Ucanha emerges from these relations between differently positioned actors and is curtailed by the ways in which economics and politics are morally embedded. Furthermore, local leaders cannot take for granted the support of followers but must provide a certain quality of life and trust-building opportunities like large-scale feasts, ritual processions, or other community-level interactions (Clark and Blake 1994; Dietler 2001; Hayden 2001).

The main focus of this project is to chronicle whether or not social inequality increased among households and community-level interactions in Ucanha at the time it was physically integrated with a larger regional polity headed by Ucí around the Terminal Preclassic/Early Classic (100 BCE – 400 CE) transition. This archaeological research will explore how social distinctions of the household were negotiated vis-à-vis the rise of social complexity, and how variables of social distinction did or did not change through the process of microregional integration. "Negotiating social distinction" refers to the processes of give and take among people that create and keep in check relationships of power, identity, and meaning. From a relational perspective, I propose these social distinctions were restricted by a balance of historically and morally embedded political-economic practices and an expectation of a certain quality of life at the household level for all members of Ucanha.

A Relational Perspective

Rooted in philosophical traditions of embodiment, practice theory, and materiality, a relational framework views social significance as a constellation of interactions between material culture and people that is grounded in historical expectations and the ability to use (and improvise) these expectations in future encounters. Identity, political authority, economic interactions, wellbeing, and numerous other components of daily life and larger institutions emerge from, and are formed by, these relations. This relational perspective moves from dichotomies of material/ideational, individual/collective, subject/object and "opens up" interpretations of the past to include how people, places, and things co-constitute one another and construct social phenomena such as communal cohesion, political authority, and quality of life (Hutson 2010). However, these relations, both at the household and communal level, are malleable and negotiable; how they play out is not just top-down domination or bottom-up resistance but a give-and-take between leaders and subjects (Joyce 2008; Joyce et al. 2001; Levine 2011). Before moving into how relations at Ucanha created, and were impacted by, household quality of life and larger-scale components of political authority and communal cohesion, it is crucial to outline how theories of practice, power, and negotiation underscore a relational approach to the past.

Rules, Improvisation, and Social Change

The importance of history with regard to expectations of wellbeing and material avenues of constructing social distinction deserves attention and is a critical component of relational approaches to social phenomena. Marx (2000:329) highlights this importance with his famous quip:

> "Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. The tradition of all dead generations weighs like a nightmare on the brains of the living."

Clearly, then, the individual is shaped by numerous relations from the past, both by material culture and other individuals, and it is through these past relations that expectations and future actions are guided, but not copied outright. These historically-rooted predispositions are a core component of theories of structuration (Giddens 1979) and practice (Bourdieu 1977, 1990) and larger arguments about agency and intentionality. Social life is based on these diachronic habits and the dialectic and recursive nature of structure—rules and resources that organize social systems—and agency—the individual's ability to have done otherwise (Giddens 1979). Thus, these larger structures, as outcomes of history, and individual agencies co-constitute one another insofar as individual actions, while facilitated and constrained by structure, become part of the social milieu of this structure, either reaffirming it or altering it in ways that, in turn, will facilitate and constrain future social interactions. Experience encompasses “a continuous flow of conduct” (Giddens 1979:55) through which people straddle past memories and learned acculturation as well as anticipatory future acceptable actions and beliefs. Indeed, Sewell (1992) argues a critical component of agency is using past knowledge and experiences successfully in a new social context through material and/or social mediums. With regard to this project, social distinction and quality of life are part of this dance between past experiences and future actions and beliefs.

Rules, as unwritten guides for action and belief, are part of this taken-for-granted component of structure that is latently inherited and guides normative beliefs and actions. However, these rules are rarely consciously followed, or even known for every action, so they emerge at the level of embodiment or practical knowledge. Both Giddens and Bourdieu are profoundly influenced by Wittgenstein's (2009 [1953:§ 217) idea of how social rules nondiscursively enliven daily practice: “If I have exhausted my justifications I have reached bedrock, and my spade is turned. Then I am inclined to say: 'This is simply what I do’”. The discursive logic and rationale of social norms becomes lost through generations of inheritance. So while we inherit rules from previous generations, it is only through social relations and our interaction with material culture that these rules of “intelligible” practice emerge (Butler 1997). However, people do not have a “filing cabinet of prefabricated representations” (Bourdieu 1977:11) to cite for every social circumstance: one must improvise in many situations, thereby allowing for change. Indeed, this ability to navigate life rests in “citationality” of improvisation, which can be strategic and politicized as Butler argues (1997). That is to say incorrect citations can occur when precedents for “correct” action are unknown or ambiguous (Geertz 1957);

conversely, incorrect citations can be done on purpose as acts of rebellion or calculated change towards a perceived wanted outcome. This improvisation can lead to social change wherein these changes can be reproduced or improvised creating a fluid instantiation of norms and practices. For Sewell (1992) the ability to apply these citations, both socially and materially, in new contents is the essence of agency and generator of social change.

An analogy of musical practice is instructive. At first, learning an instrument is quite difficult: you have to constantly look at your hands and really concentrate on where to put them. On top of that you have to learn to read music or at least understanding what notes/chords make “sense” in a given key. However, over time, repetitive engagement with the instrument (resources), musical theory (rules), and muscle memory (embodied or practical knowledge) affords the ability to “simply do,” that is, play intelligibly and well without consciously thinking about these choices. Further practice still and you are playing along with people (subjectification) when only a key signature is given because you more or less understand the “acceptable” choices of notes and the structured chord progressions of the song. Yet, in the moment there is always room for improvisation, an improvisation that is by and large instantaneous and builds from your embodied repository of musical knowledge. These movements of improvisation, either in playing a new song or simply doing a known song a little bit differently, might lead you to play these songs with similar improvisations in the future.

The same relational process unfolds socially: through this dialogue of people and things, identity is born and, more importantly, one understands how to cite social distinctions within acceptable parameters that are understood by other people. If the understanding of how people comport themselves is embodied and nondiscursively reaffirmed through practice (Taylor 1999), how we negotiate other "selves" rests in the interaction of ourselves with this human-thing fabric that composes being-in-the-world. Subjects cannot act or form identities in an atomized vacuum or through solely internalized cognition in some Cartesian sense. Actions, intended or not, are rendered useless without external relations, such as material culture and other subjects. As Gell (1998) argues, our intentions to act (primary agency) are moot without the material landscape (secondary agency) through which our intentions are made real. Thus, these human-things relations are dispersed networks of agency that are realized through these webs of interactions (Latour 1993). In other words meaning, identity, and how we envision overall wellbeing unfold through chains of signification between people and things. Rules and agency would be rendered moot without our material surroundings and vice-versa. As will be discussed later, wealth and capabilities comprise quality of life, which is instantiated through social relations, material surroundings, and collective ideas of morality.

Thus, objects are not passive components of cultural and social constructs but active creators of it. Material culture and its daily uses are so experientially pervasive, Heidegger (2008 [1927]) argues the human bodily experience and our material surroundings cannot ontologically be separated; we are so immersed in a world of things, they form us in precognitive ways. The residues of past human-thing interactions are carried with the person like an invisible patina; they form a person's dispositions and facilitate the performance of daily tasks at a non-discursive level. Daniel Miller's (2010) concept of the "humility of things"—that is the overlooked ubiquity of material culture—

is that while objects appear ostensibly as a passive backdrop, they form the status or hierarchy, part of a person's identity, and an extension of how that person seamlessly interacts with their surroundings. As Miller (2010) writes, "The less we are aware of them, the more powerfully they can determine our expectations, by setting the scene and ensuring appropriate behavior, without being open to challenge." In this regard, material objects cue behavior and expectations; if access to material objects change or similar objects are used within new social settings, these behaviors and expectations can also change.

Sewell (1992), who finds Bourdieu's concept of structure too overly reproductive, also highlights how rules and resources, subjects and things are inextricably tangled in ways that allow for social change. He argues (1992:16) "five key axioms" allow for structural change: 1) multiplicity of structures, 2) the transposibility of schema, 3) the unpredictability of resource accumulation, 4) the polysemy of resources, and 5) the intersection of structures. Multiplicity of structures refers to the variety of beliefs and material surroundings, each from different parts of their identity, that guide people's embodied knowledge. A person might be formed by structures of kinship (daily obligations and householding chores, rules of inheritance, etc) as well by structures of economic situation (wealth, knowledges of economic tasks, etc). The idea of transposibilty of schema is similar to Butler's idea of citationality insofar as people are able to apply knowledge or intelligible acts of being "outside the context in which they were learned" (Sewell 1992:17). This ability to "cite" knowledge in new situations is at the core of Sewell's construction of agency and creativity: "the real test of knowing a rule is to be able to apply it successfully in *unfamiliar* cases" (Sewell 1992:18, emphasis original). Unpredictability of resource accumulation simply states structures typically operate under expectations of previously experienced material access, yet whether or not these expectations hold is never given. As will be discussed later, changes in material access, such as ceramic wares or access spectacle, can have significant impact on structural change. The polysemy of resources, similar to Turner's (1967) concept of a dominant symbol, states that materializations can be interpreted different ways by different groups of people and in ways that diverge drastically from expectations. Additionally, these interpretations of resources can be coopted or reinterpreted. For example, construction styles, such as the Megalithic tradition among the Maya of the Northern Lowlands, can originate at the vernacular level then be used by aspiring elites to build monumental statements of social differentiation albeit in ways that are not ostentatious, that resonate with the populace. Yet the reverse could also occur wherein the hoi polloi attempt to position their display of resources through the language of eliteness. Finally, Sewell argues the process of subjectification inherently includes the intersection of structures. Subjects are made into socially intelligible actors based on different life histories and different access to resources, therefore, large-scale gatherings have the ability for people to question, affirm, or reject certain beliefs and dispositions. Because of the previously mentioned opportunities, "Structures are at risk…in all of the social encounters they shape. (Sewell 1992:19)". I believe Sewell's conception of social change (and stasis) is convincing because it is not overly reproductive and static, like ideas from Bourdieu or Althusser, and his circumspect treatment of rules and resources, humans and objects, forms a useful conceptual framework for analyzing the household in antiquity.

Therefore, there must exist a material precursor for conscious intelligible choices of citing norms but there is also a deeper practical consciousness—a "tacit knowledge that is skillfully applied in the enactment of courses of conduct, but which the actor is not able to formulate discursively" (Giddens 1979:57)—that is driven by collective mutual knowledge and the setting of the interaction. This setting of interaction, this social stage on which the humility of things plays out, is an important part of archaeological applications towards analyzing social distinction and broader creations of wellbeing and quality of life. The performative abilities of practice, past memories, and material interactions are housed in the body and are tacitly governed by the context of a given social field (Bourdieu 1977; Butler 1999), such as a residential dwelling, a large public plaza, or a pathway like a causeway.

While different material lives are a key component of social distinction (Bourdieu 1984), certain material and social expectations of ruler and followers alike must be met so that these relations are not stressed and community cohesion is maintained. Citations of material distinction as overt indices of vertical social differentiation are, therefore, constrained by tacit appeals to morality. As James Scott (1976) has noted, these distinctions are an inextricable part of economy and the relational interactions between rulers and subjects. If rulers become too extractive of labor or resources and too flashy in their material signaling of wealth, then this moral charter will be in breach and revolt is likely.

Decentralized Power

A common definition of agency, the ability "to have acted otherwise" (Giddens 1979:55), coupled with the ability to negotiate social fields brings the concept of power to the fore. What is power? Who has it? What are the sources of power? Many iterations of political economy approach power from a Marxian perspective. Here, power is rooted in the economic base of society, specifically in the realm of the means of production, which in turn gives rise to the ideological superstructure wherein power is materially realized and ideationally naturalized. For Marx, power is singular coming from the top down and is possessed mostly by the elite. This understanding of power applied to the ancient Maya is proposed by Chase and Chase (1992:316) when they characterize nonelites as the "powerless masses." Here power is *power over;* it is domination backed by the threat of physical and/or economic violence and mystified by ideology. Additionally, power is reduced to economy and is "treated as a *concrete possession* analogous to a commodity which can be wielded, transferred, seized, or alienated" (Miller and Tilley 1984:5, emphasis added). Moreover, this economic base supports ideology and ideological state apparatuses that function to obscure, naturalize, and mystify the realization of power asymmetries through material culture. Marxist conceptions of ideology rest on the analogy of the camera obscura in which ideology "does not represent the real conditions of existence but a representation of an imaginary relationship of individuals to their conditions of existence" (Shanks and Tilley 1982:131). Thus, power is negative in the sense that it is defined as the ability to make someone do something against their will. However, power is not only "a power to say no" (Foucault 1981:85). Furthermore, people have argued this coercive form of power would not be an efficient method for rulers to manage followers (Dietler 2003; Dietler and Herbich 2001; Ortner 1984; Scott 1985). As Dietler (2003:277-278) eloquently states with regard to the relationship between labor and political economy:

> “Coercion is a poor tool for maintaining long-term labor cooperation, and rulers who failed to honor this code of symbolic exchange would find it increasingly difficult to maintain the authority of their right to corveé labor or to count on work being done properly by those participating.”

In this type of power agency often takes the form of an aggrandizer (e.g., Clark and Blake 1994; Clark 2000). Power is thus something possessed by elite actors and not the “powerless masses.”

Another type of power has been referred to as “power to” in the sense that “power” can be cooperative or mutually beneficial to all those engaged in its exercise. For example, Pauketat (2000) argues the initial construction of large earthen mounds at Cahokia were not the remnants of power-over-as-domination; rather, these mounds arose from a collaborative communal ritual effort (see also Hutson 2002:66; Joyce 2008) but (unintentionally) over time became a material component of naturalizing hierarchy later in history. Therefore, the social life and historicity of material culture should be taken into account when discussing social inequality, political economy, and communal cohesion (Appadurai 1986). If these mounds empowered people through a communal effort, a physical manifestation of the community, how could they be dominated by (or have resisted) the power mechanisms behind them? The answer is, they could not have initially; however, over time these mounds could have quickly been appropriated as tools of domination. Monumentality during the Late Preclassic in the Northern Lowlands likely served a similar function of materializing the community, building cohesion through collective work projects, and engendering a sense of communal pride (Gallareta Negrón 2018; Glover and Stanton 2010; Ringle et al. 2014). As Glover and Stanton (2010:71) argue, “monumental constructions [during this period] were undertaken as a set of community-based practices and rituals, most likely tied to the sanctification of tutelary deities, which engendered a sense of community identity that was often cast in opposition to neighboring communities." Here we move away from an individual understanding to a more collective understanding of agency in which people of a similar group, status, sexual-orientation, etc. might work together in pursuit of something empowering (Barrett 2001; Ortner 1984).

Finally, a third type of power exists before power to or power over and is broadly referred to as subjectification (Butler 1997; Foucault 1983; Hutson 2010, 2013a). This concept highlights the interconnectedness of all human and nonhuman agents. Derived from the post-structural philosophies of Butler and Foucault and recently applied to archaeology (Hutson 2010, 2013a; Thomas 2002), subjectification is the process through which people become "intelligible" subjects via a dialogue with other people, embodied knowledge, places, and past traditions. Interestingly, "'Subjection' signifies the process of becoming subordinated by power as well as the process of becoming a subject" (Butler 1997:2); thus, power is simultaneously dominating and empowering through the "paradox of subjectivity" (Hutson 2010). In other words, to be an intelligible subject that other actors understand (with regard to your actions, phrases, bodily movements, etc.) you are first subordinated by a broader relation of actors; you, as a subject, are co-constituted by other subjects and the daily application of rules (Taylor 1999). But this process of subjectification also empowers you to go on in your daily life by learning acceptable "citations" of social engagement. Butler's works builds from Foucault who presents a more nuanced and relational conception of power that is not solely dominating but rather a process of "becoming", a multimodal construction of "micropowers" that both facilitate and constrain a culturally meaningful and "intelligent" body through discipline. Foucault critiques the domination-centric notion of power as a paradox of inertness: it is "in no condition to produce, capable only of posting limits, it is basically anti-energy…incapable of doing anything, except to render what it dominates incapable of doing anything either" (Foucault 1981:85). Rather, Foucault asserts power is ubiquitous and "de-centered", not as a "concrete possession" or commodity that rests solely in ideological state apparatuses or the economic base but is "exercise[d] by all human beings" and is constantly in flux (Thomas 2002:36). Additionally "truth" or reality is not "determined by a preexisting economic reality" (Thomas 2002:36) but rather comes into being through power-knowledge and discipline. In daily practice networks of power-knowledge define "which ideas and concepts are accepted as truthful or legitimate or rejected as false or incomprehensible" (Thomas 2002:39). Crucial to this subjectification as individualization is the notion of discipline. Discipline "'makes' individuals" and "has the effect of normalization and corrects deviations from the norm" (Miller and Tilley 1984:6; see also Foucault 1977) as a result of discourse; it produces intelligible individuals through interpersonal interactions and individuals, in turn, police their own actions from these past experiences. Finally, there is a fluidity and ephemerality to power relations; they are constantly exercised and notions of domination and authority are merely outcomes of these relationships; they are processes not events. Foucault's notion of power, therefore, is a bottom up approach that does not mystify or dominate a certain group of people as a result of the force of another group. Rather, power constitutes culture and makes bodies that are "intelligible" through a multimodal network of micropowers that bring truth, people, and culture into existence.

In this last type of power I believe we get to an understanding of agency that is similar to Giddens's understanding of agency as the "duality of structure." For Giddens power does not equal agency and structure does not equal some obstinate construct of norms that says not do this or that. Rather, structure and agency are different sides of the same coin, and they are recursively related. To me, it seems Giddens's "duality of structure"—as well as Bourdieu's (Bourdieu 1977:72) "dialectic of the internalization of externality and the externalization of internality"—are similar to physicists trying to combine classical Newtonian laws with quantum mechanics into a unifying theory of everything by constructing a theory that incorporates broad macroscopic rules with specific experiential niceties. "Structure" is both the medium and outcome of rules and resources that exist outside of individuals, while agency is the internalization, both consciously considered and non-discursively embodied, and subsequent externalization (back into structure). Thus society is neither composed of subjective phenomonologies or objective social facts a la Durkheim (2013 [1895]). In a sense it is composed of both simultaneously. This understanding of society articulates well with a relational understanding of power as something not possessed but exercised through a constellation of rules, resources, subjects and objects. This understanding of power situates agency within all social actors and highlights how economic, social, and political institutions are interrelated and are negotiated by all peoples (e.g., see Hutson 2013a).

Households

By definition, the household as an analytical construct is a group of people; it is social reproduction par excellence. Households are defined as a co-residential, activity-oriented group, which includes which does some or all of the following: economic production and consumption, biological and social reproduction, and shared ownership of resources (Ashmore and Wilk 1988; Lohse 2013; Netting 1982; Wilk and Rathje 1982). Households are usually not autonomous. Rather, they are linked together through economic, political, and ecological relations. Since households are reproductive, rules of ownership and inheritance are important. The sociological "house" model, as derived from Levi-Strauss, has been employed as a heuristic device to understand Maya social organization because the house is a fluid construct that foregrounds the importance of ancestors (Gillespie 2000a). Inclusion in or exclusion from the "house" is the result of communal practice and not just biological descent. "House" models not only place importance on the transmission of the past, they additionally emphasize the salient materializations of the house as a collective entity. As such, the "house" as defined by Levi-Strauss (1982:174) is "a corporate body holding an estate made up of both material and immaterial wealth, which perpetuates itself through the transmission of its name, its goods, and its titles down a real or imaginary line considered legitimate as long as this continuity can express itself in the language of kinship or of affinity and, most often, both." This definition of inheritance patterns is instructive because these rules are often negotiated and unfold through lived social iterations as opposed to theoretical rules of consanguinity (Gillespie 2000b; Hutson et al. 2004). How a household attempts to differentiate itself is circumscribed by previous acceptable "citations" of wealth, yet the household and its extended social network and material culture are an empowering component of the lived daily life of its members.

While the household is a social phenomenon, archaeological studies emerging from settlement pattern research have tried to identify them through common material characteristics (e.g., Ashmore 1981; Ashmore and Wilk 1988; Tourtellot 1988). In the greater Ucí area, household architecture commonly consisted of a single, broad platform (usually between 200 and 500 m^2) with superstructures typically 20 m^2 or greater (Hutson and Welch 2014), which are generally the size of Maya residences (Wauchope 1938). Household assemblages typically include manos and metates, pottery, faunal remains, shell, lithic tools and debitage, burials and caches, figurines, censers, and other objects associated with daily household activities, such as crafting, cooking, constructing, memorializing, eating, and socializing. Through these tasks and the networks of interactions inherent therein, I will analyze how the processes of constructing social distinction and negotiating household quality of life were balancing acts between differentially positioned social actors.

Grounded in Bourdieu's (1977:72, see also 1979) assertion that habitus consists of "structured structures predisposed to function as structuring structures" wherein the household is a pervasive social arena that conditions the process of subject formation, household archaeology has increasingly focused on how daily practice animates identity, gender roles, quality of life, and social inequality. Recent developments within Mesoamerican household archaeology help situate our understanding of "commoners" and diversity within, and between, settlements using a relational approach (Ashmore et al. 2004; Hendon 2010; Hutson et al. 2004; Joyce 2008; Joyce et al. 2001; Kovacevich 2007; Levine 2011; Lohse 2007; Robin 1999, 2004). These relational approaches show that nonelite peoples can negotiate meaning and wellbeing yet must do so in the face of elite institutions. Additionally, many of these studies are influenced by works dealing with materiality, which show how the material components of daily life and people recursively (re)create social identity in ways that are uneven, thereby forming inequality, and in ways that are horizontally bonding, thereby forming group cohesion (Hendon 2005; Hutson and Davies 2015; Robin 2003). Importantly, this theoretical framework neither over-exaggerates bottom-up nor top-down approaches; rather it invokes a more complete tapestry of Maya life in the past by looking at several scales of interaction: “The social relationships that household residents develop through productive activities or ritual life create potent networks that residents can draw upon in the negotiation of authority” (Fowler et al. 2015:368). By studying households, archaeologists can analyze the so-called “hidden transcript” or a record concealed from the view of central authority, that might resist, mock, reaffirm, or transform more top-down “public transcripts” of how dominant groups disseminate ideology through images, text, and grand spectacle (Robin 2003; Scott 1990).

With a working conceptual framework of how archaeologists envision the household, I now move to define quality of life and social distinction. In both of these concepts, people negotiate their social position and identity through a dispersed network of human-material interactions and multiple social levels. The household is a critical scale of social reproduction. Additionally, at the inter-household and broader community level people forge meaningful bonds of trust that are imperative to maintaining community-wide cohesion and political success (Golden and Scherer 2013).

Social Distinction and Quality of Life

Social distinctions can occur through economic, social, political, and cultural interactions. Bourdieu’s concept of capital, which has been divided into the aforementioned avenues, argues social differentiation is (re)produced through these forms of capital as outcomes of the practical relations between subjectification and the way in which material objects form and are informed by people's identity (Bourdieu 1990; Munch 1994). Social distinctions are "the outcome of ongoing negotiation among different social collectivities" (Levine 2011:23). They emerge from the relations amongst people and between the ways in which people and material objects recursively create social identities (Levine 2011:23; see also Barrett 2001; Hendon 2010; Janusek 2004:185; Miller 2010; Pauketat and Alt 2005). Since households influence the broader political success of a community, inter-household inequalities, which can accompany broader political-economic changes, can be a point of tension that threaten community success (Brumfiel 1994; McGuire 1983; Joyce 2008). Yet within households there can also be considerable inequality based on wealth, prestige, and culturally-constructed gender roles (Hendon 1991, 2003; Robin 2003). Social distinctions can include a hierarchical vertical component, such as access to exotic prestige goods and social titles (DeMarrais et al. 1996), but they can also include a horizontal linking component such as group affiliations of taste, social capital, and economic tasks. If vertical inequalities become too pronounced they can lead to political disintegration caused by a collective feeling of lost trust and a transgressed moral authority (Golden and Scherer 2013). Providing horizontal links between households, such as similar access to ceramics or other material goods as well as social links through community-building engagements like theatrical performances or feasting, helps promote a better quality of life, which is a crucial component of political success and communal trust (Smith 2015; Uslaner 2000).

Recent archaeological studies dealing with ***quality of life (QOL)*** or wellbeing strive to move beyond simple wealth inequalities and instead seek to analyze whether or not economic and social needs of people are being fulfilled (e.g., Arponen et al. 2016; Hegmon 2016; Smith 2015). The concept of QOL is generalized as "how well human needs are met or the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains" (Costanza et al. 2007:268). Noting household quality of life (QOL) articulates well with a relational perspective because it presents individual wellbeing and community success as interrelated processes that are negotiated between households and higher-scale political and economic institutions (Deneulin and McGregor 2010).

The work of Amartya Sen has been highly influential for QOL studies in archaeology. Sen (1984, 1987) argues wellbeing can be envisioned as two interrelated components: **economic measures** and **capabilities**, the latter of which refers to how well social needs and expectations are being met. Importantly, Sen's conception of wellbeing is not just rooted in material possessions; rather, Sen stresses QOL as a measurement of being able to "do and be". In other words, QOL is inherently relational, not only with regard to how (un)evenly wealth is distributed amongst a group of people, but how material objects carry social significance and abilities. Applying Sen's concept, Michael Smith's (2015) idea of QOL is a measure of economic and social wellbeing, which he proposes, respectively, can be measured by household wealth and capabilities. Wealth is highly correlated with the overall number of durable, portable goods and energetic investment in domestic architecture within a given time period (Smith 1987, 2015:3).

However, equating economic wealth with the diversity of household possessions is a materialist construct that is surely rooted in modern capitalistic understandings of wellbeing. Emerging from peasant studies in the first half of the twentieth century largely based at the University of Chicago, which relatedly was also the birthplace of neoclassical approaches to economics, anthropologists interested in the materialization of wealth would go to households and count possessions in an attempt to quantify QOL albeit through the lens of Western consumption (Murray 2005). While these materialist attempts to quantify livelihood are not without critique (Deneulin and McGregor 2010; Scoones 2009), using the distribution of preserved goods across a settlement highlights the difficulty of analyzing wealth in the past. Nevertheless, approaching wellbeing only from the perspective of material consumption—thereby neglecting how social, emotional, and other sources of QOL add to the lived human condition—produces a myopic understanding of past inequalities. The addition of capabilities into the heuristic model of QOL strives to move beyond the material and include these other aspects of the lived tapestry of human interrelations.

Capabilities, on the other hand, represent the ability to pursue some desirable end within the structures and institutions of society. Thus, capabilities are also inherently relational. Building on Sen's ideas, Deneulin and McGregor (2010:503) argue capability exists between structure and agency or the individual and society as "living well together": "struggles to live well take place within the inter-subjective space of human relationships…[which] moves us to a dynamic conception of the relationship between 'the individual' and 'the community'." The ways in which capabilities are constructed is through the negotiation of social wellbeing, which is something that emerges through inter-personal subjectification and the ways in which material culture forms subjects and vice versa; this dance of negotiation "is dependent upon shared meanings and what we are prepared to agree upon in social collectives in order to live well together" (Deneulin and McGregor 2010:512).

Thus, capabilities are ultimately social and cultural opportunities via networks that extended beyond the artifacts; they are social, psychological, emotional. As Arponen et al. (2016:547) argue: "if we consider a person as capable of performing functions, the goods found (in the archaeological record, for instance) must be seen as facilitating the functioning and that it is in that facilitating role—and not as mere possessions—through which they enter into questions about good or flourishing human life as well as inequality." Here "functioning" is one of the main components of Sen's capability approach and is defined as activities or states that form a person's wellbeing, which can include safety, social engagement and spectacle, economic opportunities, or pursuing any activity or state that would augment one's QOL. Similar to Robb's (2004) idea of the "extended artifact" an object not only has economic value, but it also instantiates relations beyond the material thing to include social, symbolic, and cultural significance. Smith attempts to measure capabilities through the diversity of possessions within an artifact class and other external interactions such as nonlocal trade (Smith 2015). Materials like obsidian, jade, nonlocal ceramic wares, and high-quality chert would all attest to these greater social and cultural opportunities since access would likely require external social networks. Their mere possession would also allow for social capital that others without them would not have access to. Feasting and other rituals, like caching or interments, would also strengthen social networks between related households, in the case of kinship rituals, and possibly more broadly depending on the scale and location of feasting episodes. Following Sen's idea that enjoyment of social participation is a critical component of the capability approach, I would also argue that the ability of a household or a larger political institution to provide opportunities of social engagement for other people—whether through feasting, ritual processions, widely-attended theatrical performances—would also indicate a higher degree of capabilities. Arponen et al. (2016) convincingly argue that during the Late Neolithic the ability of one group to prohibit or diminish access of ritual or social encounters of another group had negative implications for capabilities and overall QOL. Finally, a household's QOL would follow them in other social interactions as part of their social identity and would impact their ability to negotiate future social relations.

Studies in household archaeology show ***social distinctions must be analyzed using polythetic data sets*** because only looking at variables like access to prestige goods or architectural energetics can homogenize social differences (Kowalewski et al. 1992a; Lohse and Gonlin 2007; Marcus 2004). Analyzing social identities polythetically can produce finer resolution of vertical social inequalities and horizontal linkages. Furthermore, as several studies argue (Lohse and Gonlin 2007; Lohse and Valdez 2004) degrees of eliteness can vary across space and time. Therefore, by using 1) <u>architecture</u>, 2) <u>feasting</u>, 3) <u>diversity of household assemblages</u>, 4) <u>caching/burial rituals</u>, and the 5) <u>use of space</u>, I will chronicle social distinction at Ucanha in order to see whether or not vast differences in QOL between households threatened social cohesion. In order to attempt to analyze some of these differences systematically, I will construct Gini coefficients where possible (such as architectural investments and diversity of household assemblages).

Architecture

1) Architecture: Among the Maya, Hendon (1999) argues by the Late Preclassic, architecture becomes the focal point for differentiating households as a corporate group. Indeed, architecture is not a passive setting but an active element in the construction of social relations and identities (Tringham 2000). As such, differential architectural investment becomes a proxy for social stratification (Abrams 1994; Carmean 1991; Smith 1987; Tourtellot 1988; Tourtellot et al. 1992). Architectural investment is a broad category that includes size, materials, volume of construction, embellishment (e.g., plastering, quality of construction), and specialized structures, such as food preparation areas, private storage facilities, and ritual shrines (Abrams 1994; Chase and Chase 2004; Hendon 1991, 2000). The use of megalithic stones, which date from the Late Preclassic to Early Classic (Hutson and Davies 2015; Mathews and Maldonado C. 2006), would be a particularly salient visualization of social distinction. Furthermore, since houses are envisioned as living entities among the Maya (Gillespie 2001; Stuart 1998), the relationship between people and their houses would inform their social identity and degree of hereditary inequality. Since more wealthy households tend to be larger (Netting 1982; Wilk 1984; Wilk and Rathje 1982), dwellings with larger living areas would have higher wealth. More voluminous dwellings indicate a greater ability to mobilize labor, therefore dwellings with higher volumes should also have more elevated economic QOL. The relatively high population density at Ucanha would allow people to observe neighboring levels of household wellbeing and social differentiation. Therefore, as studies have shown (Haviland and Haviland 1983; Hendon 2000), sometimes

materializations of wealth need to be hidden or obscured so as to not sow envy or moral transgressions among the populace.

Megalithic architecture would have also integrated people along the UCC intimately through the physicality of construction and more broadly as part of an intelligible landscape. This style of architecture consists of large rectangular limestone blocks with rounded corners, at least 60 cm in length, and dates roughly to the end of Late Preclassic through the beginning of the Early Classic (Mathews and Maldonado C. 2006; Taube 1995). The physical construction of megalithic structures would have integrated people through the "sociality of stone" at the intimate, albeit comparatively short-lived, level of intra-household interactions (Hutson and Davies 2015). The physical act of finding, quarrying, carrying, and setting these large blocks of limestone would require a respected moral position and trust among social networks in order to gain access to limestone and to mobilize labor through balanced reciprocity beyond the immediate household. These individual stones—weighing between 1250 and 2700 kilograms per m^3 according to experimental studies (Sidrys 1978)—would require the coordinated movement between two or more laborers, a dialogic embodied practice that would strengthen intra-household, and possibly inter-household, relations (Hutson and Davies 2015:14-15). Additionally, extra-household interactions beyond quotidian tasks (e.g., constructing a basal platform or retaining wall) have the capacity to foster a general trust between members of a community, which would be a critical component of successfully integrating the diverse and growing populations of the Late Preclassic (Golden and Scherer 2013). Given the population increase towards site centers as a result of emerging Late Preclassic leaders providing ritual pomp and economic goods, such as painted ceramics, for the population (Glover and Stanton 2010; Ringle 1999), it is likely that the adoption of the megalithic style was a way to materialize intra-communal social differentiation. Yet this style also likely facilitated polity-wide integration as a process of materiality that galvanized people at and beyond the household level through a shared sense of style and, possibly, through the physical act of construction.

Megalithic structures as a tradition and style of the visual landscape along the UCC would reinforce the idea of integration. Building with megaliths may have been see as the "proper" way to construct a dwelling, a "citation" of architectural grammar. The widespread use of megalithic architecture, both in domestic and the monumental contexts, indexes a broader integration into the UCC polity and further afield with the regional capital of Izamal and other larger centers like Aké, which also used megalithic construction techniques (Millet Cámara and Burgos Villanueva 2006; Roys and Shook 1966). This regional iteration of megalithic architecture (which is likely distinct from but related to megalithic construction as seen in the Yalahau area [Glover 2012; Glover and Stanton 2010; Mathews 2003; Mathews and Maldonado C. 2006] and at earlier sites in the El Mirador basin [Hansen 1998]) likely originated at Izamal (Hutson 2012) and would have been a salient component of the built landscape along the UCC. Megaliths would have been a contradictory resource that united people communally and regionally, while simultaneously being a fulcrum of social differentiation as a manifestation of variable access to labor and materials. Indeed, architecture is not a passive setting but an active element in the construction of social relations and identities (Hutson 2010; Tringham 2000). While not every household along the UCC chose to use the megalithic style, its presence in a range of socioeconomic contexts would have provided a familiar background for daily practices as well as less frequent, larger-scale interactions. Furthermore, since houses are envisioned as living entities among the Maya and a component of personhood mapped onto the landscape (Gillespie 2001; Stuart 1998), the relationship between people and their houses would inform their social identity and how integration manifests itself through the citation of intelligible constructions of dwellings.

Finally, I argue the network of relations required to construct a megalithic building would have created a system of reciprocal indebtedness between people, thereby augmenting the social aspect, or capabilities, of a household. Agricultural communities have a complex set of in-built, social insurance to manage risk and uncertainty (Halstead and O'Shea 1989). Given that the Late Preclassic was a time of possible drought conditions (Curtis et al. 1996; Dahlin 1983; Hodell et al. 2007) and that the geophysical area included thin soils, poor water retention, and less-favorable agricultural conditions (Larsen 2012), the use of megaliths might have also served an economic function of hedging risk. As mentioned above, the social relations inherent in megalithic construction were likely dispersed. It is possible the resources and labor inherent in megalithic construction produced a network of indebtedness. However, it is likely these risk-hedging networks were built along kin lines, both real and fictive, lines and kin groups with historically higher QOL would have larger and richer networks to draw from thereby being able to stem the tide of demographic, ecological, and/or political pressures. As Ringle and Andrews (1988:190-192) note, "the emergence of extended families as a stable residential unit…distinguishes Late Formative settlements from settlements in earlier periods" whereby "[i]ncreasing security of agriculture production through the reduction of conflict and the sharing of resources would have meant increasing success of the community". Therefore, while architectural investment and the megalithic were surely a node of social differentiation, it is also possible that the social networks inherent in its construction also served as a distributed form of obligated reciprocity.

Feasting

2) Feasting: Archaeological evidence underscores feasting as a context for materializing social differences as well as building social cohesion (Dietler 2001, 2003; Dietler and Herbich 2001; Pauketat 2000a; Mills 2004). Feasting was a practice that forged inter-household reciprocity networks, provided entertainment, and galvanized people to donate labor (Craig 2007; Dietler and Herbich 2001; Fox et al. 1996; Hendon 2003; LeCount 1999, 2001; McAnany 2010; Wells 2007). Feasting is also responsible for distributing material flows, likely of both subsistence goods and prestige items. Feasts were a critical component of the economy since they facilitated exchange (Mauss 1990). Several authors working in the Maya area cite recounts from Landa (1941), who wrote that feasting among contact-period Maya was accompanied by the distribution of nice ceramic vessels as well as large quantities of food to take home (Hendon 2003; Foias 2002). Hendon (2003:206) even suggests that food and other items given away were greater than those consumed during the feast itself. The gifting of prestige items, such as polychrome pots and jade among the Maya, would have forged sociopolitical alliances through the burden of reciprocal obligation. It is likely this strategy of gifting would have cross-cut social rankings. As Foias (2002:239) states, "Elite control over prestige items-jade, polychrome vases, cacao, and so on-gave the ruling class social power that was linked to feasting economies integral to each individual's life, whether elite or nonelite." Freidel's (1981) pilgrimage-fair model (of which feasting was an integral component)

highlights how the seemingly “decentralized” dispersed residential pattern of the ancient Maya was overcome by these centripetal forces of mobilizing people and goods. In this model Freidel argues site infrastructures such as roadways and grandiose architecture would facilitate pilgrimages which would be accompanied by fairs and marketplace exchanges thereby integrating dispersed populations and (inter)regional economies through pilgrimage fairs.

Dietler (2001) famously has defined three different functions of feasts within political economy: entrepreneurial, patron-role, and diacritical. The distinctions between these three are based on degrees of inclusion/exclusion, the ability of attendees to economically reciprocate to hosts, and the prestige of accompanying material culture.

In the *diacritical feast*, the use of haute cuisine and style (e.g., Bourdieu 1984) demarcates more elite tastes and access to resources. Diacritical feasts normally take place in front of an ostentatious backdrop such as that of a luxurious palace or monumental architecture thereby naturalizing social differences through the access to these areas. Thus, the context of this feasting episode would be more exclusionary and only accessible to the most highly ranked people of society. High-status foods, that is fine tastes, are a critical component of diacritical feasting. In the Maya area the best indicators of this type of feasting would likely be the presence of vases, since they are immediately associated with the consumption of cacao (LeCount 2001; Foias 2007). For example, the highest frequency of vases found at Xunantunich was associated with the Castillo and was likely from the politically charged setting of elite chocolate consumption. In the Philippines feasts that occurred at chiefly residences had higher proportions of the high-status food rice, as recovered from paleobotanical evidence (Junker 2001). Finally, faunal evidence from Cahokia suggests elites had greater access to more prime cuts of meat (Kelly 2001) as well as greater access to domesticated sources of food. White's (2005:362-363) isotopic analyses of faunal remains reveals more elite households ate greater proportions of domesticated animals that were intentionally fed domesticated crops (as evidenced by the greater presence of C4 plants). In sum, diacritical feasting is most likely identified in exclusive and ostentatious architectural settings in conjunction with high status taste as manifested in food and serving wares. Thus, diacritical feasts would forge horizontal bonds between elite households at the expense of nonelite household QOL. The presence of new forms and visual elaborations of ceramics associated with Terminal Preclassic feasting assemblages are arguably the result of "a social environment marked by increasing stratification" (Glover and Stanton 2010:72; see also Callaghan 2013; Reese-Taylor and Walker 2002). Thus, different types of feasting could impact household QOL and social distinctions and be a point of social tension (Cook and Glowacki 2003; Dietler 2003).

With *patron-role feasting* social inequality was naturalized through the rhetoric of communal identity as guests agreed to support patrons with labor or other services as long as patrons routinely provided lavish parties. The patron-role feasting is roughly similar to the work feast and some of its hallmarks will be discussed below (e.g., the presence of bimodally distributed ceramic assemblages with regard to rim diameter and the presence of large cooking/preparation vessels). Architecturally, one would expect a context can accommodate rather large groups of people. For example, among the Wari state sponsored feasts transpired in large open unroofed plazas, where the percentage of open space to roofed patio space was usually over 60% (Cook and Glowacki 2003). As

Yaeger (2000) has convincingly argued, larger domestic platforms at the site of San Lorenzo in Belize were the location of patron-role feasts that facilitated the formation of a communal identity, which helped facilitate labor mobilization and tribute demands and simultaneously bolstered the economic and symbolic capital of the broker-patron. At San Lorenzo, people occupying larger domestic platforms are thought to have functioned as "brokers" by collecting tribute for the local capital of Xunantunich. These brokers also had access to gifted high-status ceramics from the royal court. These households helped forge local communal ties by hosting large feasts in exchange for the foodstuffs produced by the local population, the majority of which helped feed Xunantunich. It is through these patron-role feasts, in in which local leaders provide for the community, that social inequality was naturalized by providing for the community (Yaeger 2000, 2003; Yaeger and Robin 2004). Thus an internal contradiction exists within feasts since they both integrate and divide populations as hosts and attendees. The processing of animals and preparation of food is another useful indictor for patron-role feasting. Since large quantities of food are needed, expediency is the name of the game. Animals used in communal feasts tend to minimally processed and roasted in an expedited fashion compared with domestic preparation (Potter 2000:483), thus one would expect bones not to be disarticulated and exhibit extensive burning. Finally, locales of patron-role feasting would have more groundstones than necessary for domestic needs, some of which would possible have minimal use-wear as a result of their periodic use (Brown 2001).

Finally, the *work exchange* (i.e., empowering/solidarity feast) would leave a much lighter archaeological signature, thus it is the most difficult to identify. As Pluckhahn et al. (2006) describe, discrete middens with excellent vertical integrity are key to isolating these events. These events are typically held at domestic structures, thereby making it even more difficult to differentiate between daily refuse and feasting episodes. However, a few lines of evidence are promising. Since many of these households likely do not hold feasts regularly, one should not expect to find feasting-specific vessel forms or highly decorated serving vessels (Pluckhahn et al. 2006). Faunal and flora remains should coincide with regard to seasonal availability since the provisioning of this mode of feasting would take advantage of nearby sources. This heterarchical mode of feasting has also been documented at Chan Nòohol from the presence of elevated phosphate levels in outdoor areas near dwellings coupled with near absence of wealth items in the nearby house (Robin 2002). At this more intimate scale Robin (2002; Yaeger and Robin 2004:161) also notes there is correlation between the size of the cleared work space in a house-lot and the frequency of that household holding feasts. To identify this type of feasting discrete deposition events coupled with soil chemical analysis is critical.

Identifying feasts, which are single-episode activities, is notoriously difficult due to the palimpsest nature of archaeological deposits, especially those at the household. Often times, archaeologists are left with accretional midden deposits that have accumulated over multiple generations. Thus, following the work of Turkon (2004), Rosenswig (2007:6) argues "an archaeologically realistic approach to feasting must include a conglomerate of such behavior and consider how food and status would have intersected during specific social transitions." Where possible, however, single-episode deposits are more instructive and informative. I utilize Rosenswig's (2007) approach to identify feasting in the archaeology which includes: (1) Facilities, (2) Food Preparation, (3) Food Presentation, and (4) Food Consumption (see Table 2.1).

Table 2.1 Expectations for identifying feasting archaeologically. Adapted from Rosenswig 2007: Table 1.

Category	**Behavior**	**Material Expectation**
1) Facilities	Food preparing facilities Special Feasting Location	Distinct hearths, roasting pit Distinct houses, mounds
2)Food Preparation	Food processing (grinding /cutting) Food cooking	Manos, metates, chert, obsidian Boiling pots, fire cracked rock
3)Food Presentation	Serving: Food Drink Larger Groups	Fancy dishes and platters Fancy cups and jars Large vessels and distinct size classes
4)Food Consumption	Specialized use of: Meat Grain	Distinct species and/or cuts of meat Distribution of macrobotanicals

Since ceramics are typically the most ubiquitous remains of the past, they are quite useful for identifying feasting episodes in the past. Generally, approaches to identifying feasting episodes in the past have centered on dimensional variation (specifically the size of vessels [e.g., Blitz 1993; Cook and Glowacki 2003; Wells 2007]) as well as non-metric attributes (specifically the visual ostentatiousness of a vessel [e.g., LeCount 2001; Welch and Scary 1995). While the vast majority of the feasting literature focuses on rather larger-scale feasting, there have been efforts made towards identifying feasting remains at smaller household-level contexts (Pluckhahn et al. 2006). I will discuss each of the lines of ceramic evidence in turn.

Generally, dimensional variations within ceramic assemblages associated with feasting would differ from other household assemblages in three major ways. One would expect to find (1) a bimodal distribution of bowl rim diameter (Cook and Glowacki; Potter 2000); (2) larger vessels (Blitz 1993; Wells 2007); and (3) a higher ratio of service-to-preparation vessels (Hirth 1993a; Smith 1987; Welch and Scarry 1995). For example, Potter (2000) suggests the bimodal distribution of bowl rim diameters, specifically in cooking pots, in Zuni ceramic assemblages during the Pueblo IV period in the US Southwest marks a formal shift towards communal feasting that took place in centrally located plazas: smaller bowls were used for domestic food preparation, while larger bowls were used in communal feast preparation. However, is possible that extended family households, such as those seen in the Maya area, might exhibit similar trends for cooking bowls, yet serving wares with bimodal distributions in the Maya area are taken as evidence for feasting (Wells 2007). Also in the Southwest, the large pueblos of Gran Quivira and Pueblo Colorado (AD 1400 – 1600) procured finely-made glaze-wares through long-distance trade because they were important materials in public ritual feasting. However, others (Wills and Crown 2004:160) working in the Southwest caution that this bimodal distribution might be the result of increasing household size and/or changes in food preparation (women simply produced fewer meals each day in larger pots). Overall, this bimodal distribution of bowls intimates large quantities of food were prepared and cooked and then distributed to individuals in personal bowls. Regardless, several studies show many residential assemblages do not display a bimodal distribution of ceramic size classes (Cook and Glowacki 2003; Wells 2007); this distribution is more likely found in large open public spaces like plazas. Secondly, even in the absence of clear bimodal distribution of bowls with regard to rim diameter, the presence of large bowls used for preparing or cooking can also be used as an indication of larger-scale feasting (Blitz 1993; Wells 2007). This poses the question what is “big”? At Late/Terminal Classic Xunantunich LeCount (2001:946) states large bowls have a diameter greater than 30 cm. Interestingly Wells (2007), working at El Coyote in

Honduras, also comes up with a similar break in size (those >29 cm in diameter were considered large). However, local classifications of size are imperative; these studies mostly act as a methodological framework.

Finally, with regard to metric qualities insofar as they relate to form, loci of feasting should display a higher ratio of service-to-cooking wares (Hirth 1993; Smith 1987; Welch and Scary 1995). For example, at Xochicalco Hirth (1993) found that large courtyard-style residences had a statistically significant higher ratio of service-to-cooking wares, suggesting these higher-status residences held “patron-client” type feasts. During a transitional period at Cuauhtémoc, a Formative (Preclassic) site in the Soconusco, more elite households that had feasts had elevated serving-to-cooking ratios of over 4:1, compared to roughly 2.5:1 for less elite assemblages (Rosenswig 2007:17).

From a visual standpoint, decorated ceramic wares and the forms of those wares are a crucial component of feasting because of their presentation capabilities and wealth statements. Indeed, Clark and Blake (1994) argue some of the earliest pottery in the New World (Barra) was the result of competitive feasting amongst emerging “aggrandizers” because the Barra assemblage consisted of finely-made, highly visual ceramics that took the familiar forms of serving vessels (in this case gourds). The presentation and performance of feasting is just as important as the actual food being consumed. Evidence from Moundville and its hinterland sites shows that in a more public setting, there was a higher frequency of more “open” serving vessels (in this case flaring-rim vessels) than compared to more “private” contexts of feasting (Welch and Scary 1995). In the Maya area, the culmination of stylistic embellishment is manifested in exquisite polychrome pictorial ceramics. Late Classic hieroglyphic texts explicitly give the vessel’s form, its contexts, and sometimes even its owner, thereby imbuing these wares with esoteric knowledge and otherworldly powers (Inomata 2001; Reents-Budet 1994). Terminal Preclassic service vessels also highlighted visual components of presentation as seen in the explosion of forms, surface treatments, and use of color, most notably red, yellow, and orange. While hieroglyphic inscriptions were not present on Late Preclassic ceramics, higher proportions of decorated serving wares in the Preclassic both among the Maya (Callaghan 2013; Inomata et al. 2015; Rathje 2002) and further afield throughout Mesoamerica (Carballo et al. 2015; Clark and Blake 1994; Rosenswig 2007; Rosenswig et al. 2018) is taken as evidence for new ways in which commensal politics emerge as arenas for social differentiation and negotiations of social structure.

Diversity of Household Assemblages

3) Diversity of Household assemblages: Economic studies also show household assemblages are a component of QOL that influences and (re)produces relations between people and material culture. Household studies routinely show a positive correlation between household wealth and greater assemblage diversity (Hayden and Cannon 1984; Smith 1987). Following a similar logic, the proportions of food service-to-food preparation vessels revealed clear distinctions between elite and nonelite households in many archaeological contexts since it is implied more elite households can extract food preparation labor for subordinate households (Fry 2003; Hirth 1993b; Smyth et al. 1995:333; Welch and Scary 1995:413). Turkon's (2004:234) study of the social construct of status in prehispanic Zacatecas included "the distribution of decorated ceramics, frequencies of ceramics with high production requirements, and the variation in the diversity of ceramic assemblages, as well as the relative frequencies of prestige items,

which include shell,…non-vessel ceramic items, and obsidian." Additionally, Turkon (2004:237) calculates the ratio of serving to utilitarian wares (Serving Vessel Index or SVI), which should be higher from middens associated with elite households compared to those non-elite ones.

Within the Maya lowlands, vases, which are intimately associated with chocolate consumption, tend to be the most clear-cut indicator of an elevated social position (Fry 2003; LeCount 1999, 2001). During the Late Preclassic, spouted vessels are also associated with chocolate and are seen as an indicator of greater household status (Powis et al. 2002) as are bichromes with a variety of surface treatments, decorations, and forms (Glover and Stanton 2010; see also Chapter 3). However, ceramics need not be "fancy" prestige goods to make statements of wealth. As Fry (2003:89) argues, "The presence of limited water sources in northern Yucatan made the water source a larger-scale public domain and would have encouraged the use of higher-quality vessels [ollas or jars] as status or wealth markers." That is, since water sources were not privately controlled, another field for inter-subjective encounters would be places like wells and cenotes. Unlike households in the Puuc where private water storage features were normal, households around Ucanha would have had to travel to water sources, such as caves or the cenote near the rejollada, on a frequent basis; therefore, encounters with other people would be regularized and an expected arena to make material statements of social distinction.

Smith (2015:4) argues a household with a diversity of household possessions can "pursue various goals" thereby improving their QOL through a wider breadth of social networks which he equates with social capital. In this conception, the "openness" of a site or neighborhood—its number and intensity of links from beyond the settlement itself—equates to higher capabilities and, as a result, a higher QOL. For Smith (2015), household capabilities are manifested through exchange systems and style networks. Since exchange systems can provide differential access to certain goods which can also highlight different economic provisioning systems—for example redistribution versus market economy—I will use Gini scores to analyze differential access to fancy ceramics during the Late Preclassic and Early Classic (see below). By "fancy" ceramics I mean additional steps (e.g., painting, incising, punctuating, etc.) would add to the value of the ceramic at least from the perspective of a labor theory of value (Feinman et al. 1981). Since external style networks contain new information (Wobst 1977), these would augment a household's capabilities, according to Smith.

Even during times of more extractive political practices, households can negotiate QOL. An expected QOL is negotiated through the provisioning of the household; how these options are constrained or facilitated over time is an important part of social distinction and, more broadly, how households are a part of communal success or failure. Even in times of increased domination by political-economic forces Levine's (2011) work at Postclassic Tututepec suggests that nonelites negotiated lower tribute demands, which allowed them to retain some of their wares that were traded for wealth statements such as polychrome ceramics.

Caching and Burial Practices

<u>4) Caching and burial practices:</u> The performative capabilities and resource claims made by interment practices are a critical component of social identity and household QOL. Across the Maya lowlands the practice of interring caches within dwellings in

order to "ensoul" them through dedication rituals is well documented across all members of society (Lohse 2007; Mathews and Garber 2004). For the Maya, house rituals not only animate the physical dwelling, but they also animate the sociological house by reinvigorating ancestral claims of authority and belonging (e.g., Gillespie 2000a, 2001). Once the cache is interred it becomes part of the social memory of the group that witnessed these rituals, thereby becoming an additional avenue of social power and social differentiation (Hendon 2000, 2010; Hutson 2010; Gillespie 2001). However, the difference between a cache and a burial was often blurred for the Maya (Becker 1992). Mass depositions of artifacts such as obsidian debitage and broken ceramic vessels can also be envisioned as dedicatory events which animated or deactivated architecture (Garber et al. 1998; Moholy-Nagy 1997; Stross 1998). As mentioned above, since the physical dwelling was envisioned as an extension of a household's personhood, these types of ritual would be another avenue for promoting QOL and social distinction.

Broadly, Becker (1992:193) argues caches and burials can be viewed as earth offerings "to feed the gods…in order to bring forth renewed life and to continue the cycle of being". These practices not only indicated prosperity through the value of offerings interred and land tenure claims (Binford 1971; McAnany 1995), they are also an extension of the collective household's personhood (Gillespie 2000c, 2001). Dedication and termination rituals in both elite and nonelite Maya households convey similar cosmological tableaux—such as three-tiered, quadripartite universe with specific colors associated with cardinal directions—albeit through a range of material goods such as large jade celts and other exotic goods to quotidian items like chert flakes, white marl, and carbonized twigs (Estrada-Belli 2006; Lohse 2007; Mathews and Garber 2004).

Caching practices can accompany architectural renovations and are ethnographically envisioned as feeding an infantile living structure (Stross 1998; Vogt 1969). In some contexts, large deposits of lithic debitage (Hruby 2007; Moholy-Nagy 1997; Pendergast 1990, 1981) and ceramics (Brown and Garber 2005; Garber et al. 1998:129-130) are seen as caching on a larger scale in ways that mobilize resources yet still function as an offering to an animate structure. Most importantly, these caching/burial practices underscore that the house is a living entity, and in the process of (re)building it during these rituals, the knowledge and relations between witnesses become an important component of social distinction and household identity (Hutson 2010). The material and dramaturgical components of caching/burial, thus, are important components of QOL as wealth (i.e., objects interred) and capabilities (i.e., knowledge and social identity).

Use of Space

<u>5) Use of Space:</u> Relational archaeological perspectives have also noted the differential use of space as a component of social distinction at the household level (Parker Pearson and Richards 2005; Robin 2002). Here, space is an arena for (re)producing social identities and meanings as assemblages of people and material culture shape, and are shaped by, acceptable uses of space (Butler 1999; Certeau 1984; Pred 1984). These acceptable uses, however, emerge through repeated action, such as food preparation and consumption, craft production, and ritual caching, and contain a moral aspect of the proper way to do things (Hendon 2010). Within the use of space, rulers and subjects alike negotiate social meanings and acceptable actions (Butler 1999). Robin’s (2002) analyses of soil chemistry signatures at Chan Nóohol show how the differential use of space and the activities that transpired therein were a critical piece of

social differentiation in a seemingly “homogenous” rural village. How the household is situated within the broader spatial context of the site can also impact the social capabilities of a household. Research at Chunchucmil shows how causeways and neighborhoods of greater settlement density would have had more frequent interpersonal interactions, thereby increasing inter-household trust and social networks (Hutson et al. 2008; Hutson 2010). Changes in the use of space, in turn, can change how people socially approach space and QOL as capabilities.

In sum, households are interdependent and an important node on the lived landscape because they (re)produce social identities, economically provide for people, and collectively constitute the community. Questions of household QOL and social differentiation strive to analyze not only how daily life forms identity, but also how members of a community can negotiate an expectation of wellbeing. By diachronically analyzing how these five variables of household QOL unfold, I hope to chronicle social distinction with a focus on how wealth and capabilities do or do not change around the time of Ucanha’s physical integration into a larger polity. For example, Late Preclassic life in the Northern Maya Lowlands is a period of material and social experimentation, a balancing act between emerging social differentiation and an ideology of communal integration. Unlike the more rigid and historically ingrained materialization of social differentiation seen in the Late Classic, the material components of distinction during this time were more fluid, in general, and more ambiguous during and after the process of Ucanha’s regional integration.

Gini Coefficients: An Attempt to Quantify Social Distinction through Distribution

While attempts to reconstruct QOL in the past will inherently be incomplete and part of wellbeing is experiential and subjective, recent methods strive to quantify aspects social distinction. This methodological approach is useful because it (1) helps connect empirical data and high-level theory through testable models (Smith 2011) and (2) allows data sets to be compared across time, space, and degree of social complexity (Oka et al. 2018; Peterson and Drennan 2018; Smith et al. 2018; Smith 2015). One method of quantifying access to resources is calculating Gini coefficients named for Italian statistician, Corrado Gini. A Gini coefficient measures the degree of concentration of a given unit among the population where a coefficient of 0 would indicate complete equality of distribution (all households have the same amount of a given unit) and a coefficient of 1 would indicate complete inequality of distribution (one household would have all of that given unit). One way to calculate a Gini coefficient for households is to rank-order each household according to the quantity of a particular variable (e.g., architectural volume) then double this rank-order, subtract from this value by the degrees of freedom, and then multiply this value by the actual value of the variate for that household. This method can be done using Excel in what is referred to as the "Spreadsheet method" (see Chase 2017:Table 1). Then, each of these values is summed and divided by the square of the number of variates times the mean of the variates. Common archaeological constructions of Gini coefficients include measuring architectural volume, domestic artifacts, and burial goods (Smith et al. 2018:Figure 1.2).

It is also important to remember that Gini coefficients measure differentiation and not necessarily inequality, for example when measuring diversity of artifacts as an indication of capabilities (Peterson and Drennan 2018:40). Furthermore, the average prosperity of a given population as manifested by a variety of material distinctions must be considered when making claims of differentiation when using Gini coefficients. As Peterson and Drennan (2018) illustrate, a sample of burials in which only one has a poorly made pot would produce a high Gini coefficient whereas a burial goods sample in which five burials have extremely costly grave goods, 20 burials have moderately costly grave goods, and 11 burials have no grave goods would produce a lower Gini coefficient, thereby implying *less* social distinction. It is doubtful that one crummy pot actually represents such a marked polarization of differentiation. Indeed, when burial facility volume is included, the Gini coefficient of the single pot example is greatly reduced (Peterson and Drennan 2018:61). Oka et al. (2018) construct a Composite Archaeological Inequality (CAI) index—although perhaps it should be called a Composite Archaeological Differentiation (CAD) index—as a solution to measuring distinction across multiple units. The CAI calculates the Ginis for *n* variables and then finds the geometric mean of these Ginis:

$$\text{CAI} = (G_1 * G_2 * G_3 * \ldots * G_n)^{1/n}$$

They (Oka et al. 2018:74) argue a CAI is better suited to measure degrees of differentiation than Ginis because it can be used to derive indices from previous empirical data and can be applied to future empirical data. For this dissertation, and as will be discussed further in chapter 5, Gini coefficients for household data will be calculated for architectural volume, diversity of bichrome varieties during the Late Preclassic and Early Classic, and diversity of all ceramic varieties during the Late Preclassic and Early Classic. The application of Gini coefficients is a fruitful pathway for analyzing past inequalities and distinctions as well as producing comparable data sets with great time depth that can meaningfully add to modern conversions about QOL and its negotiation (Smith 2015).

Community-Level Interactions, Moral Authority, and Social Cohesion

Economic and political interactions are forged through a negotiation of needs and wants from the perspectives of both rulers and subjects joined in a meaningfully constituted community (Joyce 2009:191-192). Successful elite institutions would have had to closely monitor negotiations and relations between emerging leaders and followers since these relations could be transformed through daily practices (Joyce 2009:191-192). Crucial to this perspective is the notion that power and social distinctions are fluid constructs that are instantiated through daily interactions and are monitored by a variety of stakeholders (Barrett 2001; Levine 2011). As such, history emerges as a crucial component of social analysis because cultural practices are rooted in how past experiences, expectations, and routines guide, though not unequivocally, future interactions between people, things, and places (Bourdieu 1977; Hutson 2010; Giddens 1979; Pauketat 2001; Taylor 1999).

These social negotiations, to some degree, are built on the construction of trust and quality of life. Nonelites are typically invested in sharing some of the successes of a polity and economic practices, even though they may provide labor and tribute, and to some degree elites are bound by a moral obligation to their constituents (Houston et al. 2003; Hutson 2013:216; Scott 1976). Building from Uslaner (2000), Golden and Scherer (2013:402) argue forging a sense of generalized trust—that is across a wide array of socioeconomic actors and not just your immediate neighbors—is an important component of political success:

> "For actors not in daily contact with one another, highly charged events, such as marketing, feasting, participation in royal spectacles, warfare, and collaboration in construction efforts, among others, served to reinforce the sense of morality and trustworthiness (or un- trustworthiness) of individuals with whom they came in contact."

During the Late Preclassic at Ucanha, this generalized trust would likely have been strengthened when parts of the community were brought together during the intensive construction and periodic maintenance episodes, such as replastering the central plaza (see also Joyce 2008; Pauketat 2000; Ringle 1999). As Glover and Stanton (2010:71) argue, "monumental constructions [during this period] were undertaken as a set of community-based practices and rituals, most likely tied to the sanctification of tutelary deities, which engendered a sense of community identity that was often cast in opposition to neighboring communities." However, as social inequality grows, for example by the exclusion of some people with regard to economic, ritual, and/or political resources, this generalized trust begins to fragment and political and economic institutions can founder. The capabilities of a household might diminish as they are no longer able to pursue social interactions, such as processions or possibly market exchange vis-à-vis these larger political shifts.

Additionally, political-economic studies show a morality of reciprocal obligation is an important component of social cohesion (Polanyi 1957; Scott 1976; Wilk and Cilggett 2006). Pronounced inequality can lead to political disintegration from a collective feeling of lost trust and a transgressed moral obligation of reciprocity (Golden and Scherer 2013). Successful elite institutions would have had to closely monitor interactions and relations with less powerful actors to make sure that these relations are not perceived as unjust or overly unequal not just at the household level through QOL, but also at the level of the community (Joyce 2009). At the community level, Smith (2015) uses the term ***prosperity*** where wealth is the aggregate wealth of households and their social capabilities and consists of collective construction projects, stability of residence, population growth, settlement longevity, and resilience to external shocks (Smith 2015:Table2; Table 2.2). Frequent face-to-face interactions, such as large-scale rituals, construct a "community" and generate trust, reciprocity, and morality (Smith 2015:6). With the presence of elite governance at Ucanha by the Terminal Preclassic, Houston et al.'s (2003) model of "moral authority" fits a relational perspective because it presents community cohesion as a negotiated process underscored by a network of reciprocal obligations and interdependent communal values that both "elite" and "non-elite" actors alike expect. Rulers provide large ritual performances and in some cases can help provision households with a sustainable QOL, while followers provide support, labor, and, likely, tribute (McAnany 2010; Ringle 1999).

Table 2.2: Smith's (2016:Table 2) idea of Community Prosperity

Component	**Indices**
Wealth	Sum of Household Wealth
Capabilities	Collective Construction Projects
	Stability of Residence
	Population Grown
	Longevity of Settlement
	Resilience to External Shocks

Large-scale feasting and accompanying rituals are centripetal forces in the Maya area and would have strengthened a sense of trust and added to overall QOL (Golden and Scherer 2013). For example, feasts enticed people to donate their labor in return for a good party (Dietler and Herbich 2001), which is likely how most early monuments were constructed (Joyce 2008; McAnany 2010:141-143); thus, an expectation of moral reciprocity is inherent in these relations. Indeed, Dietler and Herbich (2001:240) argue, feasting is "nearly [the] exclusive means of mobilizing large voluntary works projects before spread of monetary economy and capitalism". These collective work events accompanied by feasts as a reward for those who provide labor have a long history throughout Mesoamerica, from the archaeological past to the ethnographic present (Wells 2007).

Gift-giving and other economic transactions would have likely accompanied these feasts thereby bolstering local support for the feast-throwing leaders (Foias 2007; Hendon 2003). Ethnohistoric accounts from De Landa in the Yucatan discuss patrons giving food and ceramic vessels to attendees of New Year's festivities (Tozzer 1941). Among the Aztecs, the king would distribute lavish gifts such as precious stones and body adornments to his attendees, and then they would consume large amounts of fowl, chocolate drinks, and pulque (Durán 1994:170-172). Furthermore, feasts (and their associated work projects and rituals) were often cyclical, so communities came to expect them (Hendon 2003, 2010). If these moral obligations between ruler and subject are transgressed, however, elite institutions are likely to collapse. For example, Joyce's (et al. 2001, 2008, 2009) work in the Río Verde Valley along the Pacific Coast of Oaxaca, Mexico, shows that Early Classic leaders focused more on cultivating an elite identity through diacritical feasting and the redistribution of prestige goods only to neighboring elites, thereby undermining the more communally-focused, inclusive feasting and economic practices of the Terminal Preclassic. As a result, this moral authority was violated and leaders lost the support of their constituents, ruling institutions collapsed, and populations declined.

Given what we know about the various scales of household provisioning within Maya economies, it is likely some aspects of economic distribution occurred on the community or supra-household scale through some iteration of marketplace exchange (Dahlin 2009; Potter and King 1995; Sheets 2000), likely with Preclassic precedents (Hirth and Pillsbury 2013; Masson and Freidel 2012; Freidel and F. Kent Reilly 2010). One fruitful method of identifying marketplace exchange has been Hirth's (1998:456) distributional approach, which argues that if distribution occurs through a central marketplace, a given commodity should be found in similar quantities at households of varying wealth throughout a settlement, yet "variation among households should be a function of either differential purchasing power or the operation of provisioning networks in addition to marketplace exchange." Therefore, even though raw counts of goods might differ according to purchasing power among households, the fact that access to a similar range of goods is found at the household level can indicate marketplace exchange. Smith (1999) adds to this approach by stating a lack of sumptuary laws would imply economic provisioning would be a function of purchasing capability. If Gini coefficients for some commodity (e.g., bichrome ceramics or obsidian) were near 0 (i.e., evenly distributed), one could argue that an economic distribution mechanism such as a marketplace was present. To be clear, this is not to say that full-blown markets such as those well-documented archaeologically from the Late Classic existed during the Late Preclassic; however, it is likely these marketplaces had roots in Preclassic iterations (Hutson in press) and these marketplaces would have augmented QOL both through the variable of wealth (procuring goods) and capabilities (social interactions and greater artifact diversity). As will be seen in subsequent chapters, Gini scores for Late Preclassic bichromes were near zero, implying even distribution of this commodity; however, the Gini score for Early Classic polychromes was nearly the diametrical opposite at nearly 1. This discrepancy might highlight different social and/or economic roles of these ceramics as well. Furthermore, Ucanha's system of intrasite causeways with associated plazas at these termini in addition to a large Central Plaza, which could have held the entire population during the Late Preclassic (see Chapter 6), would have provided the space and infrastructure to hold marketplace exchange.

Conclusion

A relational perspective places the importance not with "either/or" but with "and" insofar as the interconnectedness of people, places, and things form society in equally importance ways. Additionally, the historical situatedness of these interrelations is critical because the past guides people's actions and beliefs, both in conscious and preconscious ways. How we make sense of the world is so materially grounded we navigate life nondiscursively in ways that do not allow for the easy separation of dualisms like mind/body and people/things. Yet, the relations can be uneven between people and people can try to mitigate this unevenness because pervasive relations between people and things leave room for negotiation. This holds true for past peoples both at the household and communal levels of interaction.

Households expect a certain QOL based on the material and social landscape with which they interact. This landscape helps form their social identity and their place in the world. That is to say a potential QOL is formed through daily interactions and is made real by morally acceptable citations of social differentiation. At the communal level, ideas of trust and moral authority are imperative components for holding differing groups together and successfully managing sociopolitical cohesion. These various scales of interaction produce different structures and resources which collide with daily interactions, thus allowing for the possibility of change. The physical integration of several sites via a long-distance roadway would have greatly impacted the scope of these interactions, both locally and further afield. It Is under this circumstance that I chronicle social and material changes at the household and community level at Ucanha.

CHAPTER 3: PRECLASSIC TRANSITIONS AND SOCIAL DISTINCTIONS: CERAMICS, MEGALITHS, AND CAUSEWAYS IN THE NORTHERN MAYA LOWLANDS

"Not only is Late [Preclassic] occupation widespread across the northern Maya lowlands, but there is also increasing ceramic evidence of regionalism developing…The Late [Preclassic] is also marked by the construction of major civic ceremonial architecture" –George Bey, III (2006:26-27)

The Preclassic-Classic transition, a period of great sociopolitical and demographic change, has received some attention, albeit mostly from an elite perspective (Callaghan 2013; Coe 1990; Stanton and Freidel 2005). Political success in the Maya area varied during this time. In the Northern Lowlands at Yaxuna (Stanton and Freidel 2005), the Yalahau region (Glover and Stanton 2010), Edzna (Forsyth 1983), and Komchen (Andrews 1988), there is a "Preclassic collapse" or a political and demographic downturn (see also Ball 1978; Grube 1995; Hansen et al. 2002). Nonetheless, sites that are more broadly linked with Ucanha, such as Izamal (Hutson 2012) and Aké (Roys and Shook 1966), did not witness a decline at the end of the Preclassic; rather, they emerged as polity centers. More locally, however, the largest site on the Ucí-Cansahcab causeway, Ucí, appears to have a smaller Early Classic presence indicating a subservient position to Izamal. Since individual wellbeing and community success are interrelated processes that are negotiated between households and higher-scale political and economic institutions (Deneulin and McGregor 2010), I look both at data from the household and community level at Ucanha in order to address changes in quality of life during this transition. Indeed, household economies undergird larger political institutions (McAnany 2010:134-135) and "collapse is a political process that is the product of irrevocable failure of the system of governance (Golden and Scherer 2013:417)", so addressing questions of social differentiation and household quality of life (QOL) with regards to political-economic success requires further investigation at the household level as well as larger spaces, like plazas, where community-level interactions occurred. If political-economic practices favored a more even distribution of wealth or a high household QOL during the Terminal Preclassic but then transitioned to greater social inequality by the early parts of the Early Classic, it is possible ruling institutions were failing and populations diminished as followers "voted with their feet" as a result of unmet expectations (Farriss 1984; Inomata 2004).

In this chapter, I provide regional and chronological context about the built landscape and ceramic assemblages during the Terminal Preclassic to the Early Classic. Notably, I discuss how "Protoclassic" ceramics, megalithic architecture, and a variety of roadways were nodes of social differentiation as well as foci of wider integration of Ucanha with local and regional sites and traditions. While some studies have addressed the "drastic transformation" (Stanton 2012:276) at the end of the Preclassic life in the Northern Lowlands, few have analyzed how expectations of wellbeing factored into this transformation. By setting the stage, my goal is to provide context to do just that.

Ecological Setting of the Northern Plains

The greater Ucí area, including Ucanha, is located in the northern plains of the Yucatán Peninsula (Figure 3.1). The natural environment of the northern plains presents both advantages and disadvantages. Unlike the heterogenous "managed mosaic" of areas like the Petén and Belize that afford niche ecological specializations that some households exploited to improved their QOL (e.g., Lohse and Valdez 2004; Potter and King 1995; Scarborough and Valdez 2009), the ecology around Ucanha is quite homogenous and, comparatively, resource deficient. Overall the area receives relatively low rainfall amounts (700 – 1000 mm annually) and has thin soils interspaced with exposed karst limestone bedrock; coupled with high evapotranspiration, agricultural potential is low in the region (Larsen 2012). A limestone-rich environment provided ample building material for basal platforms as well as embellishments such as megalithic architecture. This karst landscape, however, includes an array of hydrological and/or agricultural resources such as caves, cenotes, and *rejolladas*. While the *rejolladas* in along the UCC are not the deep, vertical-walled types around Chichén Itzá that had the potential to grow cacao (Munro-Stasiuk et al. 2014), they still would have been a source for agricultural intensification since they allow for the formation of thicker, nutrient-rich organic soils. Recent soil studies of *rejolladas* at Ucí indeed found isotopic signatures associated with ancient maize production (Larsen 2012). In the Petexbatun, *rejolladas* were incorporated into the economic strategies of wealthier households as private gardens (Dunning et al. 1997). The presence of a long rejollada at Ucanha would have possibly afforded a similar node of household differentiation in a rather unforgiving agricultural landscape. Indeed households nearer *rejolladas* in the greater Chichén Itzá area had wealthier household assemblages then those further away (Kepecs and Boucher 1996). Finally, these geological features—caves, *cenotes*, *rejolladas*—were incorporated into the layout of Ucanha as part of a sacred landscape (Hutson and Welch 2014), thereby likely drawing populations to the site by providing more impressive access to the supernatural (see also Cowgill 2003).

Additionally, high-quality lithic resources are wholly absent around Ucanha. The procurement, production, and trading of lithic resources and tools was undoubtedly a component of augmenting household wealth (e.g., Aoyama 2007; Mcanany et al. 1989;

Shafer and Hester 1991; Speal 2009), which typically correlates with a greater overall number of durable, portable goods (Smith 1987, 2015). Furthermore, the social networks created with more specialized lithic production would have increased a household's capabilities according to Smith's (2015) idea of QOL. With the nearest high-quality chert and its specialized production some 200 km away at Xkichmook (Potter and King 1995) and a near absence of obsidian at Ucanha, it is likely households exploited local limestone quarries, called *sascaberas*, for nodules of low-quality silicified limestone in order to make expedient tools (Dahlin et al. 2009). However, some high-quality chert and obsidian were recovered from households at Ucanha, so this remains a possible variable of household wealth (which will be discussed later) and capabilities, since these were imported and would have required social networks to procure.

Interestingly, by the end of the Preclassic, a combination of environmental changes and human impacts might have been an impetus for drastic sociopolitical changes around the Northern Plains and more broadly in the Maya world. While paleoclimatic phenomena are locally variable, sediment cores from Quintana Roo (Curtis et al. 1996; Hodell et al. 2007) and in the El Mirador (Hansen et al. 2002) basin suggest decreased rainfall, possibly precipitated by increased agricultural intensification, was a critical factor in a demographic downturn by the end of the Preclassic period. Given the already precarious agricultural situation of Ucanha, the response of leaders to environmental shifts would have been a point of negotiation between households and political institutions to provide for the community or preserve elite wellbeing at the expense of more modest households. Indeed, environmental insecurity and the ensuing political response provides an “opportune time to question royal power” (Lucero 2007:423), thereby intensifying elite-commoner negotiations.

Preclassic Community and Household

Much like massive monumentality to the south, Late Preclassic life in the Northern Maya Lowlands is a period of material and social experimentation, a balancing act between emerging social differentiation and an ideology of communal integration. As Bey (2006) notes the Maya of the Northern Lowlands prior to Chichen Itza were not some “cultural backwater”. Indeed, recent work rooted in previous studies at Komchen have ushered in a so-called “new paradigm” about Middle and Late Preclassic life in the Northern Lowlands (Braswell 2012:2), forcing archaeologists to look at older expressions of monumentality, communal cohesion, and household practices. Large surveys in the northwestern part of the Yucatán Peninsula have identified numerous Middle and Late Preclassic settlements, many of which had integrative features such as monumental architecture, roadways, and ballcourts (Anderson 2011).

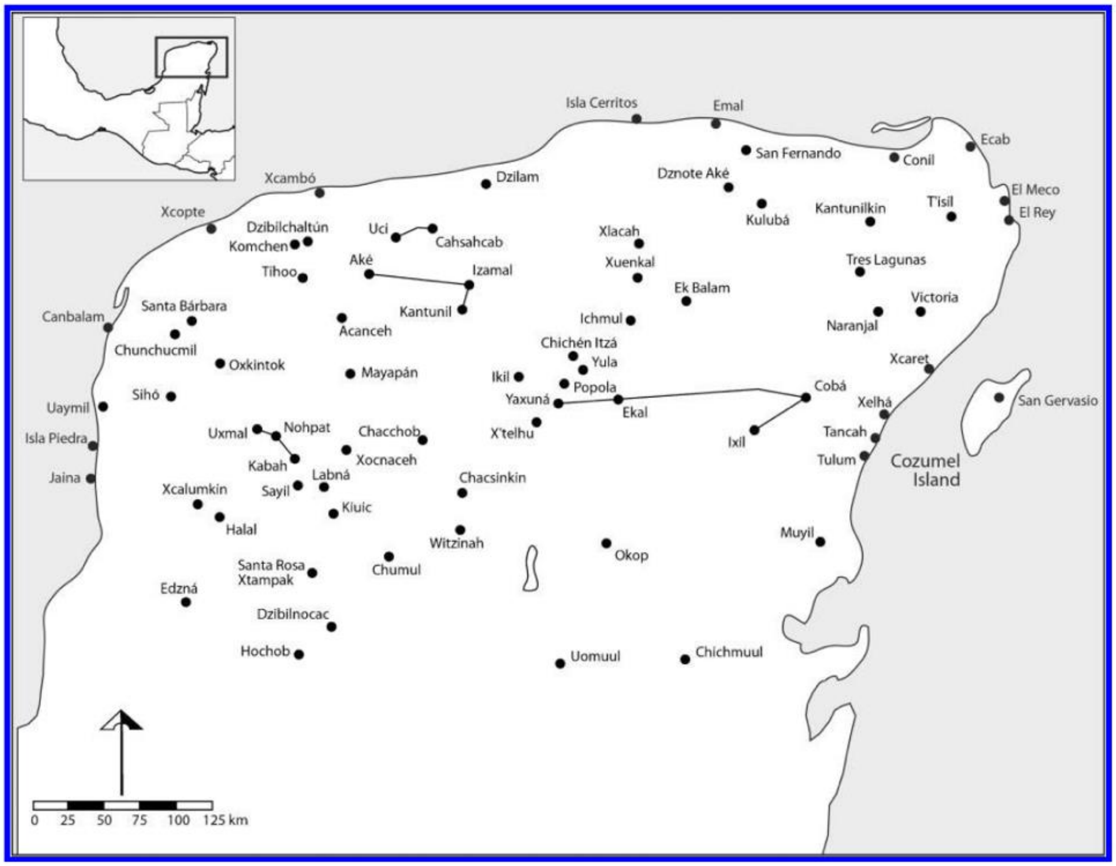

Figure 3.1. Map of the Maya Northern Lowlands with sites mentioned in text. Map from Glover and Stanton 2010:Figure 1.

Perhaps the most important investigations of Preclassic households come from Will Andrews and colleagues' work at Komchen, which provides for an interesting parallel for Ucanha because of its similar site boundary and environment. The site of Komchen was populated during the Preclassic, had an expanse of 2.4 km^2 (the same as Ucanha), and flourished in relatively harsh agricultural conditions. Unlike the majority of site in the Northern Lowlands, Komchen gives an important insight into Late Preclassic life with 90% of the ceramics recovered dating from 600 BCE to CE 250 (Ringle and Andrews 1988). Of these ceramics, there is a significant percentage (14.8%) from the Protoclassic period, and Komchen is wholly abandoned by the start of the Classic period. Similar to Ucanha, Late Preclassic residences were perishable structures built on raised rubble platforms and internal roadways linked parts of the site together. Indeed Ringle (1999) argues the built landscape of Komchen, specifically a causeway built during the Terminal Preclassic Xculul phase, would have promoted communal integration through performative rituals of procession and the gathering of the body politic. Finally, during Late Preclassic life at Komchen, Ringle and Andrews (1988:192) note, "there was no intermediate administrative level between extended families and the authorities associated with the ceremonial structures", thereby highlighting the ability of households to directly negotiate with leaders. However, causeways connect to multiple different compounds at Ucanha and there is some evidence for corporate rule; therefore, it is possible at Ucanha that some political sensibilities could have been mediated by a middle level. I shall return to Komchen later, but it is important to mention some of these similarities in order to gain a better understanding of Late Preclassic life and "intelligent" citations of social differentiation at the household and communal levels during this time period.

The Problematic "Protoclassic": A Ceramic Phenomenon

As mentioned above, assessing whether or not Ucanha experienced a "Preclassic collapse" is an important part of addressing how integration impacted, and was impacted by, social relations of wellbeing and community-building practices. Part of the reason this transition has been understudied in the Northern Lowlands is the result of chronological fuzziness and equivocal terminology (Glover and Stanton 2010). Nevertheless, the suite of ceramic traits exhibited during the Terminal Preclassic point towards the importance of visualizing social distinction, perhaps as an economic method to forge sociopolitical ties during this tumultuous time.

Part of the difficulty in discussing the transition between the Preclassic and the Classic is the result of the conflated and ambiguous use of the term “Protoclassic”. Willey (1977:391) noticed the term was used in three unclear, not mutually exclusive, ways: 1) to indicate the presence of “Floral Park” or “Holmul I” ceramics; 2) a general evolutionary stage between the Late Preclassic and the Early Classic; and 3) as a chronological period from roughly 50 BCE – CE 250. Thus, the term “Protoclassic” could refer to any combination of a regional ceramic horizon, a cultural stage, and/or a time period, often times without explicitly defining exactly which term is being used. Inspired by Willey’s work, numerous authors (e.g., see Ancona Aragón et al. 2013; Bachand 2003; Brady et al. 1998; Pring 1977, 2000; Quiñones and Boucher 2006) have discussed the problematic Protoclassic and urged for a more explicit application of the term.

As a ceramic heuristic, the origins of the Protoclassic usage associated with Holmul I and Floral Park are important because several of its diagnostic modes are still an integral component of the ceramic definition. Based on ceramic assemblages found at Holmul, Guatemala, Vaillant and colleagues (Vaillant 1928, 1934; Merwin and Vaillant 1932) introduced the Protoclassic through the Q Complex. Likewise, at Barton Ramie in Belize, James Gifford (Gifford 1965, 1974, 1976) argued a new intermediate ceramic complex—Floral Park—emerged from Preclassic redwares and included new vessel forms, treatments, and rims as well as the predominance of an orange base color and the use of mammiform foot supports. Another decorative mode intimately associated with the Protoclassic is the negative painting technique of parallel wavy-lines associated with Usulatan Wares (Brady et al. 1998:20; Pring 1977:143). Once thought to be an intrusive mode brought in from the southeastern periphery (i.e., El Salvador), examples of positive and negative trickle-painting techniques from several sites in the Lowlands pre-date these Usulatan wares, suggesting a local development of ceramic aesthetic experimentation (Brady et al. 1998; Demarest 1986; Demarest and Sharer 1986). These Protoclassic wares were also envisioned as a precursor to the true orange-ware polychromes that were one of the technological innovations that marked the commencement of the Early Classic in the Maya Lowlands.

Work done by Brady and colleagues (Brady et al. 1995, 1998) has helped refine the term "Protoclassic" as an analytic for moving beyond the type:variety system and looking at specific modes characteristic of this period of ceramic technological experimentation and aesthetic embellishment. Following Brady et al. (1998:18) Protoclassic (with a capital P) is used to denote the use of the term as the doctrinaire absence/presence of "Floral Park" or "Holmul I" ceramics, a general evolutionary stage between the Preclassic and the Classic, or a discrete time period that exists across the Maya world. The term protoclassic (with a lower-case p) indicates the term used as a ceramic stage, which is characterized by experimentation, new forms, and various attributes, such as mammiform supports, Usulatan or pseudo-Usulatan decoration, surface preparations and designs, and a number of distinct slip combinations. A "ceramic stage", according to Brady et al. (1998:18), is "conceptual unit characterized by the presence of a specific set or constellation of ceramic traits (specific forms, surface finishes, decorative treatments, designs, technologies, or other modes)—and nothing more." While the latter two uses of Protoclassic have their problems and cannot just be applied wholesale across geographic regions, even Brady et al. (1998) place a temporal component around the protoclassic phenomenon, suggesting there is some chronological component to this heuristic term; however, it is imperative to address this temporality locally. In other words, “Protoclassic” as a stand-alone time period between the Preclassic and Classic should not be confused with the ceramic phenomenon of the “protoclassic”, which is rooted in a suite of ceramic attributes and is chronologically bound but not mutually exclusive with the Preclassic or Early Classic. In order to minimize the confusion between the Protoclassic and the protoclassic, I argue that protoclassic be used to describe this ceramic stage of experimentation and aesthetic design, while the term Terminal Preclassic be used to describe the chronological and cultural phenomena.

Using examples from north of Calakmul in Campeche and building from works (e.g., Bachand 2003; Brady et al. 1998) that chronologically refine the protoclassic as a ceramic construct, Ancona Aragón and colleagues (Ancona Aragón et al. 2013) argue the “Protoclassic” can be divided into an early facet (Protoclassic 1 or the Terminal Preclassic [75 BCE – CE 150]) and a late facet (Protoclassic 2 or the Early Classic [CE 150 – 420]) based on different ceramic attributes. The former includes tetrapod button supports; pseudo Usulatan “trickle” designs; waxy Chicanel-like slips; composite silhouettes with medial flanges; and rare forms such as spouted and basket-like vessels. The latter includes attributes such as larger mammiform or tapir-shaped supports; orange, lustrous slips (sometimes with painted red and/or with white sub-slips) that seem to give way to the orange and red decoration in the polychrome tradition; annular bases; composite silhouettes with Z-angle or basal flanges; and lids (Ancona Aragón et al. 2013:93). These two facets are dated by ceramics found in different funerary contexts with different architectural styles and are tied to radiocarbon dates (Ancona Aragón et al.

2013:95-97; Brady et al. 1998:18-28). Critical to this chronological distinction is the location of flanges on composite silhouettes. For example, Brady et al. (1998) include Iberia naranja in the early facet yet put Ixcanrio naranja polícromo with basal flanges in the later facet. While the Protoclassic is a vociferously debated topic, many authors agree it is a time of experimentation, not only with a variety of surface treatments and vessel forms but also but paste and slip combinations. This ceramic stage was not merely a transition between Preclassic and Classic ceramic traditions, but an “era of technological and artistic experimentation and innovation that gave it a distinct identity” (Brady et al. 1998:34).

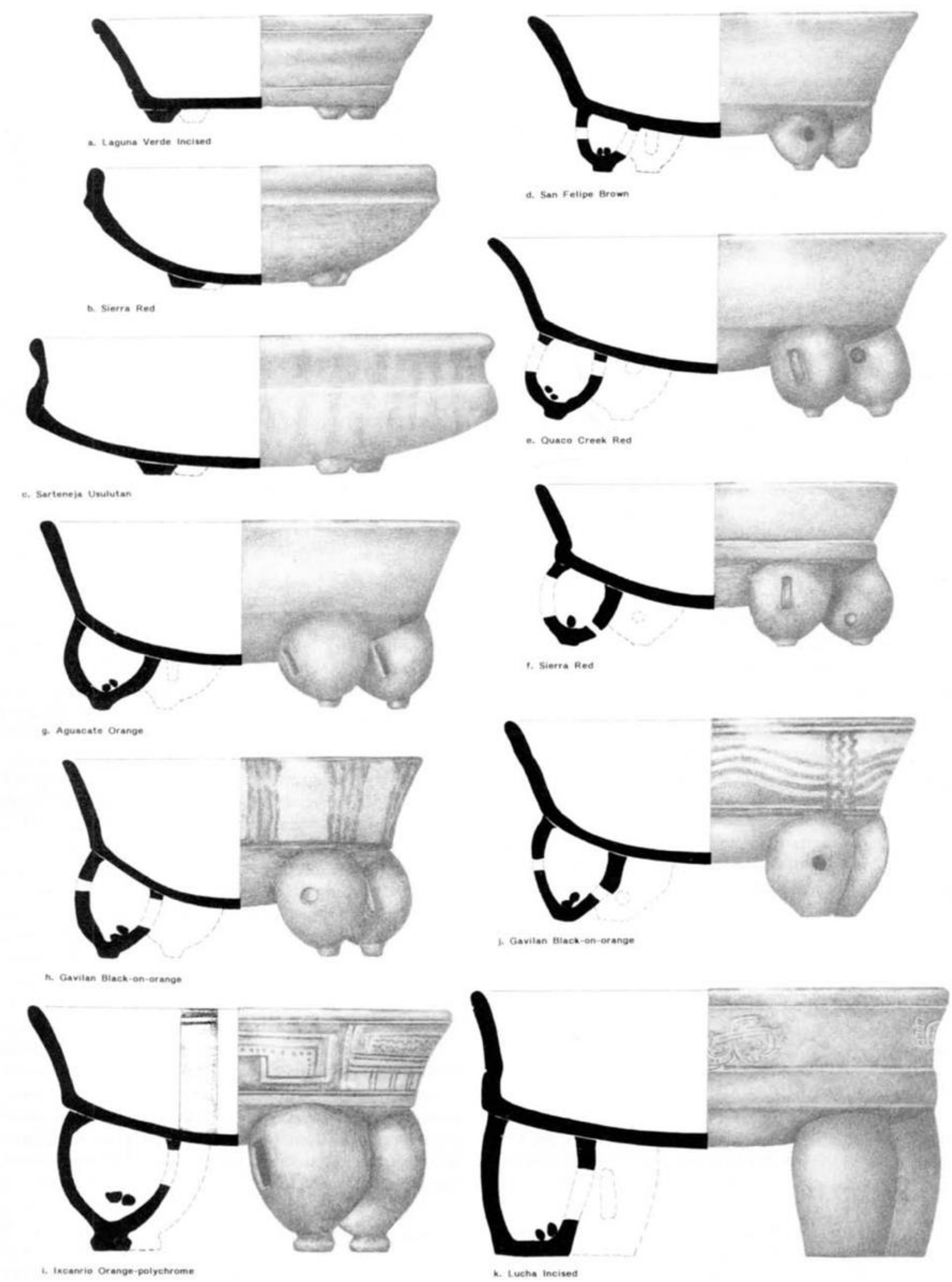

Figure 3.2. Examples of protoclassic supports from early facet “Protoclassic 1” button supports to more mammiform and “tapir’ style later facet “Protoclassic 2“ supports. From Brady et al. 1998:Figure 3.

With regard to the Northern Lowlands, Brady et al. (1998:28) associate Usil Flaky Wares types, Shangurro rojo sobre naranja, Valladolid bícromo inciso, and Timucuy with the protoclassic and as a contemporary to the Aguila group, which is characterized by a glossy, orange slip with a whitish undersurface (i.e., Protoclassic 2). Additionally, some varieties of redwares such as Xanaba and Sierra Red are also associated with protoclassic modes. For example, ceramic analysis from the nearby site Izamal, whose megalithic architecture and long-distance causeway suggest some degree of political relationship with the greater project area, shows Xanaba exhibits a mix of pastes and forms that straddle the Late Preclassic and Early Classic (e.g., large, flat-bottomed bowls with divergent walls and composite silhouette bowls). The Usulutan-imitation tickle painting of Caucel Chorreado sobre Rojo and the creamy-white surface of Xanaba Dzalpach Compuesto are associated with the Protoclassic (Quiñones and Boucher 2006). While Quiñones and Boucher (2006) include Shangurro Rojo sobre Naranja and Valladolid Bicromo within Xanaba—a distinction that was not made on this project—varieties within Shangurro, including flanges, tetrapod supports, and other surface treatments indicate this type was also part of the protoclassic ceramic stage.

Extensive work at Komchen has also helped to define the ceramic protoclassic during the Terminal Preclassic. Ceramics analyzed from 152 test pits reveal the Xculul phase (150 BCE – CE 250) accounted for 14.8% of all ceramics found (Ringle and Andrews 1988). The chronology of this phase is bolstered by three radiocarbon dates from three structures (Str. 28H1, Str. 25O1, and Str. 226) from contexts that included an overwhelming presence of the following types of ceramics (Ringle 1985:159-160). This ceramic complex includes groups that have slip on top of striations (Tipikal rojo sobre estriado and Unto nergo sobre estriado); redwares with a variety of surface treatments (Sierra rojo hojuela, Sierra rojo resist decorated; Xanaba group including the types Dzalpach compuesto, Caucel chorreado, Inciso, and zona punzada); orange wares (Aguacate and Ixcanrio); cream wares (Flor); black waxy wares (Polvero nego and Lechugal inciso) and black gloss wares (Balanza negra); and finally wares associated with the east coast of the peninsula (Dzilam and Huachinango) (Andrews 1988:54-55). While ceramics such as Tipikal and Xanaba are found in greater abundance in the northwest part of the Yucatán, bichrome ceramics with darker pastes such as Carolina, Dzilam, and Huachinango are more common in the east (Bey 2006). Since a household's social networks as evinced by diversity of possessions within an artifact class and nonlocal trade is a component of its capabilities—a major facet of quality of life—placing Protoclassic ceramics in spatial context can help reconstruct past social differentiation.

Andrews's ceramic work at Komchen has influenced ceramic typologies at Izamal as well. Analyzing over 68,000 sherds, Quinoñes (2006) also has defined a similar protoclassic presence with the Ureta complex (150 BCE – CE 250) based on a number of similar, aforementioned ceramic elements. Interestingly, this complex represents 12% of the overall assemblage, suggesting a similar occupation intensity as seen at Komchen during the Xculul phase. The Ureta complex includes many of the same types and varieties as the Xculul, however Quinoñes also includes another east coast ware, Carolina, as well as Shangurro, although she classifies it as part of Xanaba (Quiñones 2006; Quiñones and Boucher 2006). The presence of double-slipped mammiform Ixcanrio sherds, likely imported from the Peten, was also noted, and, interestingly, one was classified as a local imitation because it had a different reddish-yellow paste with a medium texture and lacked the hallmark double slip technique. Quiñones (2006:56) also notes the presence of two differnet varieities of Iberia: one imported from Calakmul and a local iteriation. Therefore, it is possible Izamal was producing protoclassic wares, and given its political clout during the Terminal Preclassic and into the Early Classic, it would have likely distributed these prestigious ceramics in order to forge alliances with elite peoples in the region.

Stanton and Glover (2010), on the other hand, take a more doctrinaire approach and reject the term Protoclassic but do recognize there are distinct ceramic innovations and experimentations that are temporally bound. Since they equate the Protoclassic with the absence or presence of “Floral Park”/”Holmul I” ceramicas, they prefer the term Terminal Preclassic to discuss this new ceramic tradition in the Northern Lowlands (see also Andrews 1988). Indeed, during the same 75 BCE – 400 CE time period that coincides with the protoclassic ceramic stage, Glover and Stanton (2010:72) propose five ceramic spheres emerge concomitantly with the increasingly hierarchical political institutions: “increasing ceramic heterogeneity resulted from growing populations attempting to differentiate themselves in a social environment marked by increasing stratification.” Studies throughout the Lowlands echo this sentiment. Reese-Taylor and Walker (2002:105) argue widespread attributes of these protoclassic ceramics (e.g., mammiform supports or the presence of Ixcanrio Orange Polychromes) found in elite and ritual contexts “reflected attempts to renew alliances and reinvent a larger social order” vis-à-vis the sociopolitical tumult surrounding the Terminal Preclassic. Callaghan (2013:335) argues these types of flashy pottery used during diacritical feasting “would have represented a major innovation in competitive feasting", which would have been a broader component of greater stratification witnessed during the Terminal Preclassic. Finally, while earlier studies argued the Protoclasic was brought by intrusive groups of people, ceramicists working at Izamal (Quiñones 2006; Quiñones and Boucher 2006) and in southern Campeche (Ancona Aragón et al. 2013) agree that these material changes were the result of internal social differentiation and favor the diffusion of ideas as opposed to the actual migration of people from areas such as northern El Salvador (cf. Bey 2006, Stanton 2000).

Megalithic Traditions

The use of megalithic stones is a hallmark of the greater Ucanha area as well as an indicator of greater household quality of life as it would have required extra-household networks to procure, shape, and transport. Importantly, recent studies on Maya households show they are not autonomous but are linked together through economic, political, and ecological relations (Lohse and Valdez 2004; McAnany 2010; Sheets 2000), thereby requiring strong social networks or capabilities beyond an individual household in order to have a higher QOL. Households are action-oriented and are defined as a co-residential, activity-oriented group, which includes economic production and consumption, biological and social reproduction, and shared ownership of resources (Ashmore and Wilk 1998; Lohse 2013; Netting 1982; Wilk and Rathje 1982); megalithic architecture would be a materialization of social distinction that would immediately be witnessed by neighboring households. The grandeur of this style was no less impressive to early explorers in the Yucatán (Brasseure de Bourbourg 1865; Charnay and Viollet-le-Duc 1863; Stephens 1843), and it was first systemically described and documented by

Karl Taube (1995) in the Yalahau region located in the northeastern part of the Yucatán Peninsula. Common characteristics of this style include large, well-dressed stones (typically greater than 60 cm in length) with rounded, pillow-like corners that functioned primarily as retention walls of basal platforms but were also used as moldings, apron corbels, and stairs (Hutson 2012; Mathews and Maldonado C. 2006; Taube 1995). Ceramic evidence and radiocarbon dates from sites in the Northern Lowlands place this construction technique between the end of the Late Preclassic and the beginning of the Early Classic (Mathews 1998; Mathews and Maldonado C. 2006), although Str. GT-10 at Ek Balam and Str. E-VIIa at Chac II are outliers that date to the Late Classic (Mathews and Maldonado C. 2006). Given the timing of the megalithic architectural style, the ability to muster the resources and labor to adorn a building with this masonry would have been a critical component of social differentiation during the process of integration at Ucanha and other sites along the sacbé and a testament of household quality of life.

Although this style overwhelmingly dates form the Late Preclassic to the Early Classic, there are megalithic Middle Preclassic precursors in the central Southern Lowlands as well as at other sites in the Northern Lowlands. In the El Mirador basin, buildings at sites like Nakbé and El Mirador had apron moldings, *taluds*, and other stone blocks measuring over a meter long (Hansen 1998) in the megalithic style from the Middle Preclassic to the Late Preclassic. Additionally, the megalithic style found in the El Mirador basin lacked the smoothed pillow-shape and by the Late Preclassic these stones were oriented perpendicular to the basal edge of platforms (Hansen 1998), which is the opposite of the parallel orientation seen in the Northern Lowlands. In the northwestern part of the Yucatán Peninsula, enormous stone platforms at sites like

Xocnaceh, Poxila, and Xtobo were built with large stones, leading Braswell (2012) to suggest these constructions were "a precursor to the megalithic style." The Middle Preclassic acropolis at Xocnaceh (Figure 3.3) measures an enormous 150 m by 150 m and stands at 8.5 m tall and the major monumental construction at Poxila is of similar impressive size; both of these massive buildings reached their final form during the Middle

Figure 3.3. An image of the Acropolis from Xocnaceh showing megaliths forming the basal platform and staircase.

Preclassic and have been envisioned as material anchors of community cohesion and social integration, as opposed to statements of elite monopolies of labor (Ringle et al. 2014). Of the monumental construction at Xocnaceh, Gallareta Negrón (2018:291) writes:

> "large-scale architectural projects in Yucatan follow the widespread pattern of constructing monumental platforms. Instead of pyramidal temples or funerary monuments, these early structures were designed to

> accommodate large numbers of people, at least on special occasions. These great complexes with large open spaces suggest that social differences had as yet to harden sufficiently for restricting social interaction."

While there are similarities in the use of megaliths between the Northern Lowlands and Southern Lowlands, the chronological gap between the megalithic style's use in the El Mirador basin and the Northern Lowlands has led Hutson (2012:125) to opine influence from the south was "at best indirect"; yet Freidel (David Freidel personal communication 2017) argues the coupling of both intersite causeways and megalithic stones in the UCRIP area employs similar built technologies to the El Mirador basin, suggesting political interactions or influence. Given that archaeologists have argued for the physical migration of people or the diffusion of ideas from the southwest Peten to the Yucatan Peninsula during the Middle Preclassic (Andrews 1990; Stanton 2000; Stanton and Ardren 2005), it is possible the presence of megaliths in the north was a local iteration of ideas from the south. Regardless, there appears to be a Middle Preclassic material precursor in the Northern Lowlands at Xocnaceh and Poxila for the idea of using large rectangular stones for an impressive architectural aesthetic.

From the end of the Late Preclassic to the beginning of the Early Classic, the megalithic style spread across the Northern Lowlands in both monumental and domestic contexts and likely spread from two core areas: Izamal in the west and Naranjal in the east. At Izamal, for example, Kinich Kak Moo—the largest structure in the Northern Lowlands, measuring 185 m per side and over 17 m high—was dressed with enormous, well-hewn megaliths by the Early Classic (Millet Cámara and Burgos Villanueva 2006). At nearby Aké, which is connected to Izamal by a long-distance sacbé, Structure 1 (Figure 3.4) was built with an aesthetically stunning megalithic staircase around the same time (Roys and Shook 1966). Most importantly, investigations led by Burgos Villanueva (Burgos Villanueva et al. 2004, 2005) in the periphery of Izamal indicated this architectural style predominated in both domestic and monumental contexts from secondary sites to smaller hamlets. UCRIP’s investigations at sites of varying size, both on and off the UCC, indicate a similar distribution although the quality and size of megalithic stones are less impressive than in the Aké-Izamal region (Hutson 2012). Therefore, there does not appear to be a monopoly over the use of this architectural style according to status.

Figure 3.4. Photo of megalithic stairway of Structure 1 at Aké, Yucatán. Image courtesy of Scott Hutson.

Work in the Yalahau region of Quintana Roo (Figure 3.5), however, suggests a more circumscribed distribution of the megalithic style. One of the largest sites in the region, Naranjal, had megalithic architecture at 16 of the 25 monumental structures (Mathews and Maldonado C. 2006). Nearby Rank 2 sites—Tres Lagunas and Victoria—made use of the megalithic style, but its use at Rank 3 and Rank 4 sites is uncommon (Glover and Stanton 2010; Glover 2012). Furthermore, Kantunilkin, another Rank 1 site in the region, does not contain megalithic architecture, leading Glover (Glover and Stanton 2010:70) to contend that there was a "lack of a centralized authority in the region." The patchy distribution of this style highlights the complex nature of political interactions during the Terminal Preclassic and underscores the distinctive capabilities of architecture. To this end, Glover and Stanton (2010:71) believe the megalithic style of Naranjal and its nearby sites would have functioned as "a constant reminder to community members of their powerful neighbors" as a focal point of social distinction in the built environment.

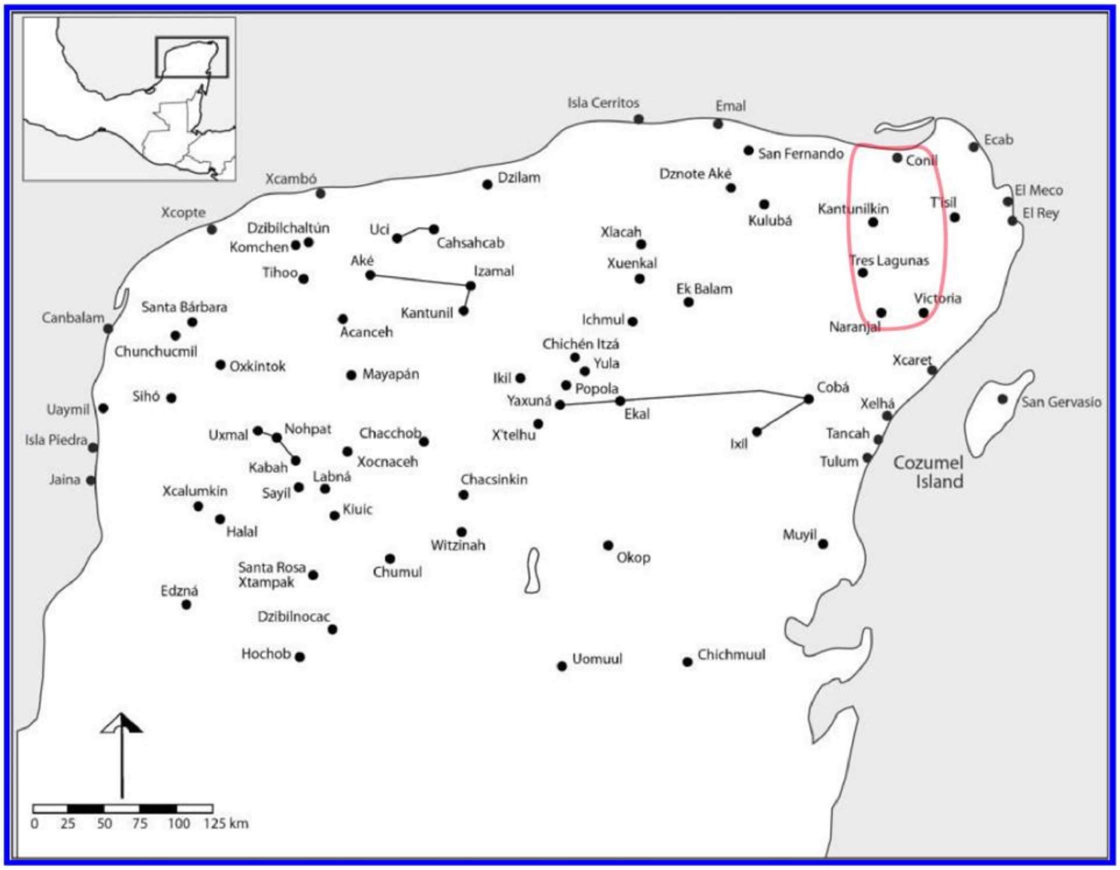

Figure 3.5. Map of the Nothern Maya Lowlands with areal extent of the Yalahau Region highlighted in red. Map adapted from Glover and Stanton 2010:Figure 1.

Causeways: Uses and Classifications of an Integrative Feature

Raised roads, or *sacbeob*, are a common part of the Maya built environment and exist in various forms and serve a variety of functions. As integrative features on the landscape, outlining different classifications of *sacbeob* is an important first step towards better understanding how their construction, presence, and use facilitated social interactions and communal integrations at Ucanha and within the Ucí-Cansahcab micropolity.

Shaw's (2001, 2008) "local intrasite" causeways are the most prevalent and are usually defined as having a distance of 1 km or less. Evidence from around the northern lowlands (e.g., Yaxuna [Stanton and Freidel 2005, see Figure 3.6], Xtobo [Anderson 2011, see Figure 3.7], Xaman Susula [Peniche May 2012]) and the southern lowlands (e.g., El Mirador [Shaw 2008]) indicate the earliest presence of intrasite causeways date as early as the Middle Preclassic or definitely by the start of the Late Preclassic. Like the other types of *sacbeob*, it is probable local intrastate roads were multi-functional. One of the most commonly cited functions of this class of sacbé is that of ritual procession transpiring on a larger cosmological stage. In this case, *sacbeob* are, in essence, "extended stages for ritual" (Ringle 1999:207). For example, Chase and Chase (2001:379) argue Tikal's *sacbeob* were primarily ritual in nature because they are very wide (21 – 70 m), thereby capable of channeling large ritual processions, and they terminate at massive temples as opposed to large open plazas. Additionally, these intrasite causeways focus on the epicenter and do not integrate the greater population. Scarborough (1998:141) suggests these causeways also effectively functioned as dams for large reservoirs. Yet the juxtaposition of standing water and ritual would likely have only augmented this sacred landscape since still water is envisioned as reflective portal to the Underworld. Additionally, the word for still water and plaza (*n'ab*) are homophones so it is possible ancient Tikaleños envisioned these reservoirs as great cosmological portal-plazas. A similar juxtaposition of ritual causeways and water is seen at Chichen Itza's Cenote of Sacrifice.

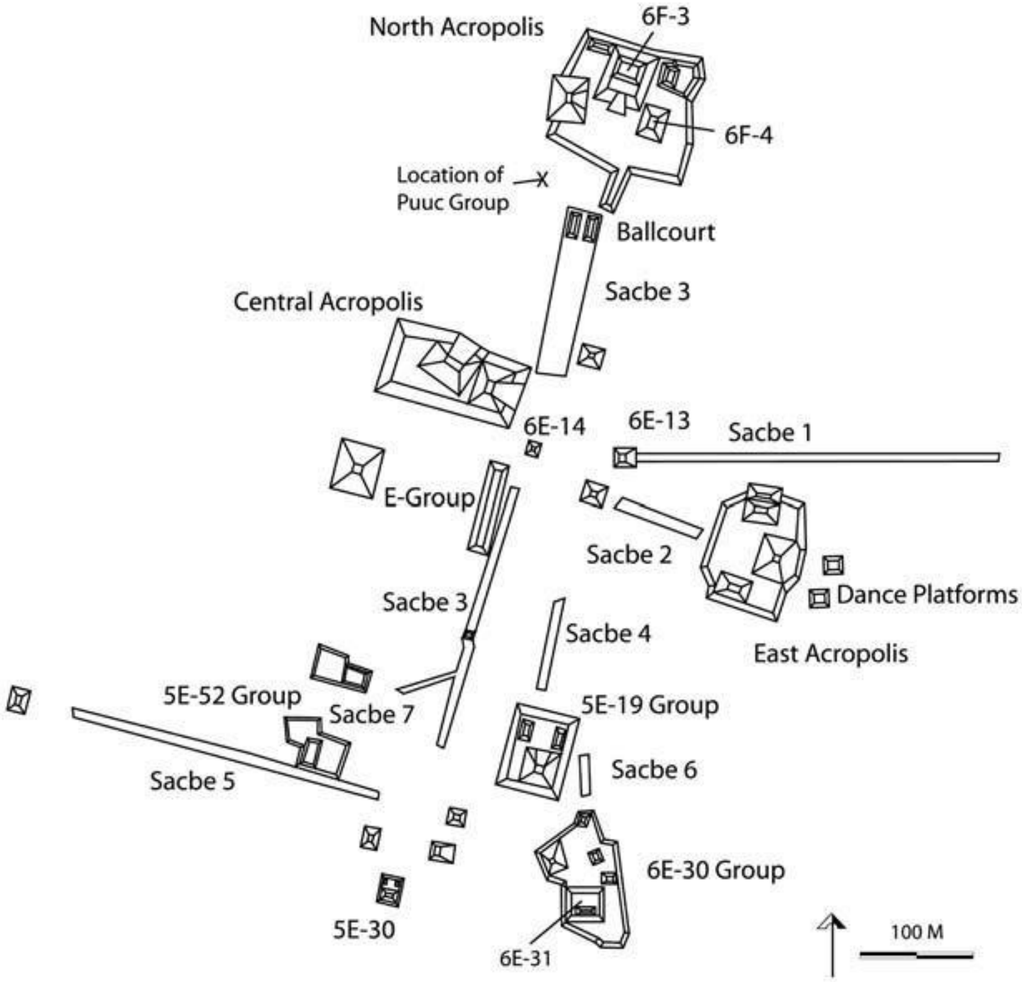

Figure 3.6. Map of Yaxuna showing intrasite sacbeob taken from Stanton and Freidel (2005:Figure 2).

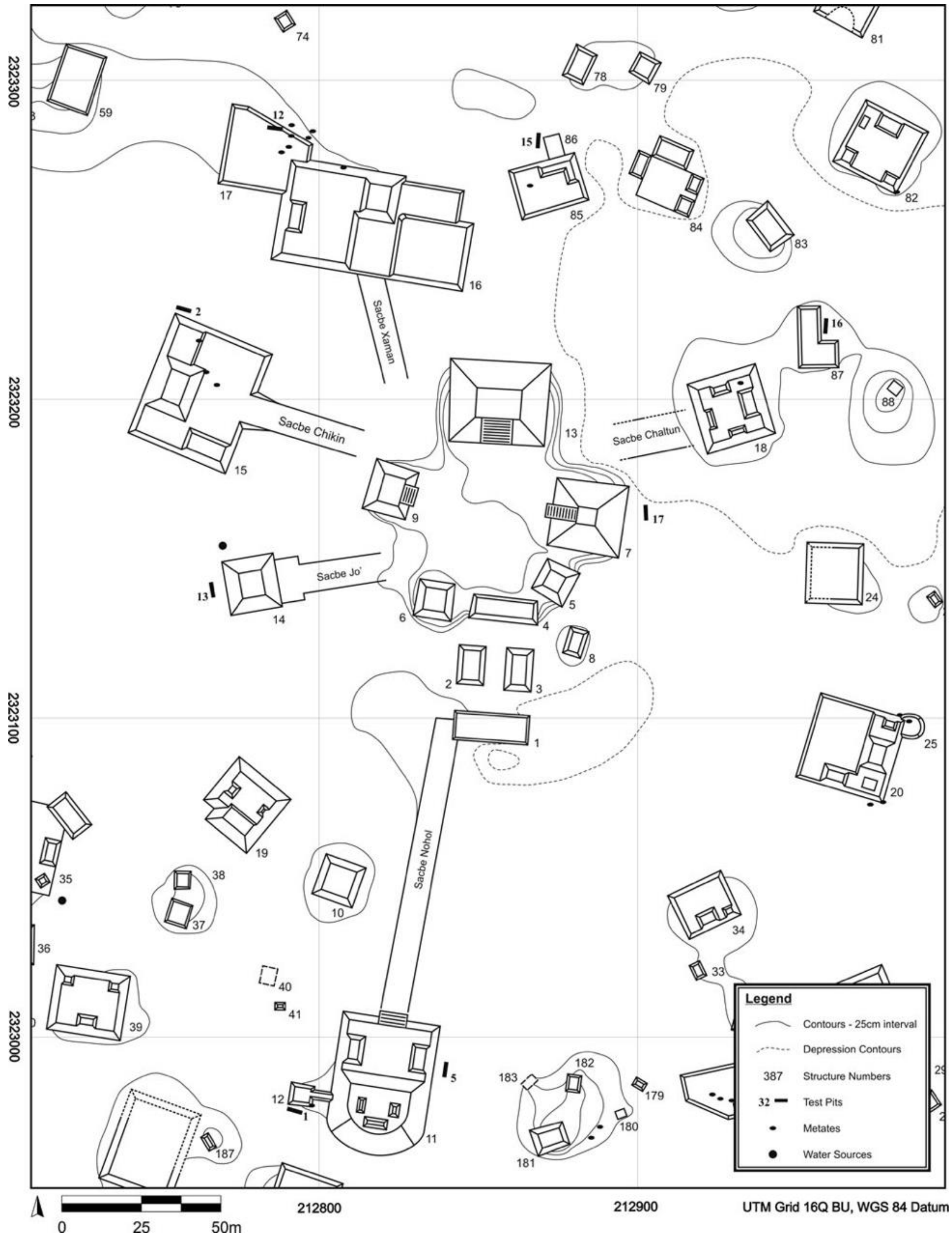

Figure 3.7. Map of Xtobo with five intrasite sacbeob converging on a central group. Map from Anderson 2011:Figure 3.

Intrasite causeways at several Maya sites are argued to activate sacred landscape insofar as they are salient cosmograms that function to metaphorically represent the moment of creation or a primordial birthing episode (Folan et al. 2009; Stanton and Freidel 2005). This spatial layout cites the ubiquitous ancient Maya belief in a quadripartite cosmos, a symbol of completion, balance, and renewal. At the center of this model is the axis mundi, which connects a three-tiered world and functions as a portal to access divine ancestors and deities of both the celestial and chthonic realms. This center is architecturally manifested as a pyramid, which represents the first mountain of creation (*witz*). While certain directional-color associations are more rigidly in elite contexts, the presence of this quadripartite metaphor in many nonelite settings (Mathews and Garber 2004; Lohse 2007; Robin 2002) attests to the widespread belief of this worldview. Citing rituals such as the *Uayeb* procession from contact-period Maya (Tozzer 1941), the movement of people from the center to the four directional peripheries would have animated the landscape as well as the community as they embodied the sacerdotal life-force of *chul'el* (Folan et al. 2009; Ringle 1999). The Kusansum myth of colonial Maya recalls *sacbeob* as living cosmic umbilical cords through which sacredness and blood flowed (Folan et al 2009:61; Shaw 2008; Stanton and Freidel 2005). These celestial skyways are said to have connected sites of great distance such as Izamal and Dzibichaltun (Folan et al. 2009:61; Shaw 2001). The cosmological significance of *sacbeob* is largely derived from ethnohistorical/ethnographic analogy and Classic period iconography and epigraphy. However, given the close articulation of the source side and the subject side of the analogy, to use Wylie's (1985) parlance, the quincunx-creation-mythology of *sacbeob* makes for a convincing argument, and the common presence of this cosmic renewal across a range of socioeconomic contexts indicates it was likely a well-understood and salient symbol.

Intrasite sacbeob also likely helped integration, negotiations of quality of quality of life, and were performative avenues to display social distinctions. Ringle (1999) believes local intrasite causeways of a ritual function helped mitigate factions between lineages that were growing more powerful by the end of the Preclassic. During this period, the focus of emergent elites was to recruit followers and exact tribute and labor while still providing a sense of community and household wellbeing. Ringle argues that some local intrasite *sacbeob* function as spaces to negotiate possible strife between competing lineages because they helped forge *communitas* in the moment of this communal ritual, yet they also re-inscribed lines of belonging and exclusion around these cults. The intrasite sacbé at Xaman Susula, while not a quadripartite cosmogram, did link a centrally located plaza to a purported throne room, thereby showing how *sacbeob* were parts of these larger emergent sociopolitical complexities (Peniche May 2012). Given that some of these roads would have required some labor inputs, albeit significantly less than their intersite brethren, it is likely their construction went hand-in-hand with the mobilization of communal labor, either as compulsory (e.g., the *fagina* system) or through work feasts as a "covert corvée" (Dietler and Herbich 2001). Regardless, during the Late Preclassic period roadways became an important part of the monumental landscape at sites throughout the Maya world (Shaw 2008) and were likely a critical component of making statements of exclusion/inclusion as emerging leaders vied for followers (Bey 2006; Ringle 1999). Given that there was no precursor for unbridled individual aggrandizement (cf. Clark and Blake 1994), emerging leaders would have used a communal ideology enacted through more inclusive ritual practices such as site-wide or lineage-wide processions on *sacbeob*.

Shaw's medium-distance causeway or "core—outlier intrasite" causeway usually runs between 1 – 5 km in length and typically connects the site core with peripheral groups. Generally, these *sacbeob* are argued to have a predominantly economic or administrative function, although others are possible. A nice example of core—outlier intrasite *sacbeob* comes from Caracol. While the Chases (Chase and Chase 2001) argue it is likely the sacbeob at Caracol served multiple functions, they believe the primary function of the *sacbeob* within the site were mainly used to integrate a series of peripheral marketplaces with a centrally located marketplace. Intrasite causeways connect central plazas with other large plazas located at two distances (2.7-3 km and 4.5-7.5 km) from the center. Since these termini group plazas lack evidence of coupled ritual and domestic activities and plazuela groups specialized in the production of certain commodities, the Chases (Chase and Chase 2001, 2004), employing a configurational and contextual approach (Hirth 1998), argue these plazas functioned as marketplaces. It is likely the central marketplace was open daily (or at least more frequently than peripheral marketplaces) and these more peripheral "solar" marketplaces operated on a less-frequent basis. In essence the Chases are stating Caracol was an example of central place theory with termini functioning as solar marketplaces (Chase and Chase 2004). Thus, these causeways would have facilitated flows of goods and people from the core to the periphery through a karstic, highly vegetated environment. The presence of shorter, informal roads, called *vias*, further helped move people and things by connecting households to intrasite causeways or with these termini areas. LiDAR (Chase et al. 2011) data suggest this structure of causeway/termini market place extended further into the hinterlands through dendritic intersite causeways than previously expected (Figure 3.8). These movements also facilitated communal integration by assisting the communication of a pan-Caracol identity as manifested in the homologous structures of *plazuela* groups, the vast majority of which had shrines located in the eastern structure marked by "distinctive 'face' and 'finger' caches" found throughout all socioeconomic groups at Caracol (Chase and Chase 2001:278; Chase and Chase 2004).

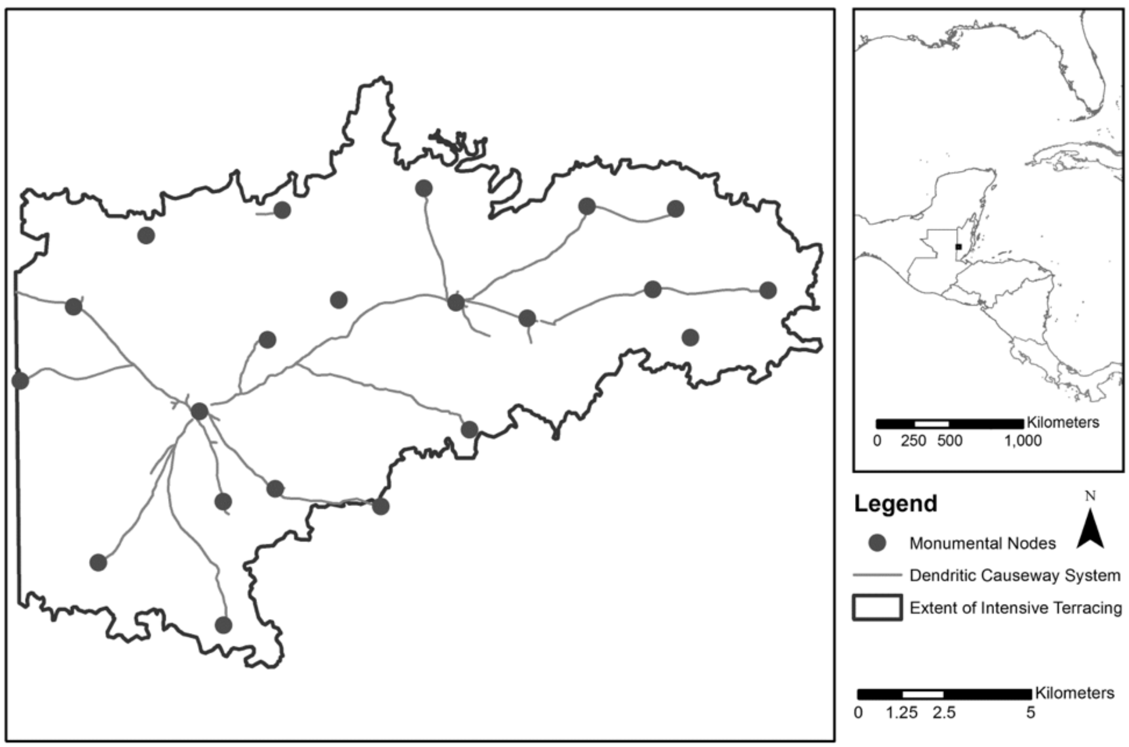

Figure 3.8 Map of Caracol's extensive core-outlier causeway system. Image from Chase 2017:Figure 1.

Finally, Shaw's "intersite" causeways are longer than 5 km and occur at only nine locations in the Maya world, the majority of which are in the Northern Lowlands (Figure 3.9). In the Northern Lowlands intersite sacbeob running from Aké to Izamal and Ucí to Cansahcab have been interpreted as integrative features used to demarcate polity boundaries (Kurjack 2003; Kurjack and Andrews 1976). These interpretations, largely developed by Kurjack, placed a prime importance on labor investment as an index of power, usually mobilized by the polity capital (Izamal or Ucí in this case). Most importantly these boundaries would have been used to include sites that could have possibly been annexed by other large competing sites. Since Aké was nearly halfway to Tiho (modern-day Merida), the other massive site in the area, Izamal strategically integrated itself with Aké as a political sign of alliance and the range of its hegemonic control. It is likely the *sacbeob* radiating out from Calakmul functioned as a similar political statement, although economic functions of Calakmul as a central place and these periphery sites as secondary market locations cannot be overlooked (Folan 1992; Marcus 1993). Caracol's causeway system, previously discussed in the core-outlier category, would also fit into the intersite category since the causeways stretch over 25 km from east to west, thereby highlighting how these categories are not mutually exclusive.

Figure 3.9. Map of Maya area showing intersite sacbeob as purple lines. Map courtesy of Scott Hutson.

Perhaps the best known of all intersite sacbé is the 100 km-long causeway that connects Yaxuna and Cobá. Shaw (2001:266) argues this sacbé "was placed to demonstrate some sort of political linkage, with Cobá as the dominant power" during the Late Classic period. Again, here we see the equation of labor input (i.e., the ability to harness and control energy [Hendon 1991]) as a proxy for power. Given that an individual at Cobá possessed the highest epigraphic title, that of *kaloomte*, during the Late Classic (González and Stanton 2013), the site was undoubtedly the regional power. Additionally, the site of Ixil, which was also connected to Cobá by a separate intersite causeway, was an agricultural resource for Cobá (Shaw 2001:267) and it is likely foodstuffs were transported along this sacbé. While Cobá is said to dominate the area, recent evidence suggests Yaxuna retained some economic independence as it was the production center of Arena Red, which was distributed east along the causeway to sites in modern-day Quintana Roo (González and Stanton 2013). Applying modal analysis, González and Stanton (2013:37) argue *cajetes*, the primary form of Arena Red, would have stacked nicely, making them ideal for transport along the Cobá-Yaxuna sacbé. Thus, in addition to a political symbol, this sacbé also served an economic function of moving goods and people across a landscape marked by undulating terrain and some areas of inundation during the rainy season. Finally, ethnographic accounts (e.g., Villa Rojas in Shaw 2008:119) show the Cobá-Yaxuna sacbé was a "true religious pilgrimage" route and included the burning of *copal* incense at various points along the way. The example highlights the point that functions of causeways change over time. They are not some static entity; rather, they have life-histories and their meanings and functions are contested, negotiated, and reaffirmed by a diverse range of people throughout the life histories of both these people and the causeways themselves (e.g., [Hutson et al. 2012]). Here, one "class" of sacbé can have multiple (I would argue simultaneous) functions. Surely, all classes of *sacbeob* can have a similar function.

In sum, it is highly improbable that only certain distance-classes correlated to one specific function. As mentioned earlier, it is likely that a given distance-class was used for a range of functions; similarly, it is likely that all distance-classes functioned similarly at some point in their life-histories. In general, all *sacbeob* are broadly considered "integrative features" (Ashmore 1981), since they physically connect a group or groups of a given population on various scales. From this perspective all types of *sacbé* would afford a closer social interaction between the groups they connected. From the intrasite processual sacbeob of Cerros and Komchen (Ringle 1999), to the core-outlier intrasite *sacbeob* of Caracol (Chase and Chase 2001, 2004) and Coba (Folan et al. 2009), to the intersite sacbeob of Aké-Izamal, Ucí-Cansahcab, and Yaxuna-Coba the construction and subsequent use of sacbeob would have increased social interactions in contexts beyond the daily intimacy of the household level. These community-level interactions afforded by causeways would have, to some degree, decreased urban anonymity and increased a generalized sense of trust (Golden and Scherer 2013). Furthermore, as multiple scholars have asserted, the Maya "ritual economy" consisted of a muddled interrelation of political, ritual, religious, and economic facets (Foias 2002, 2007; Kovacevich 2007; McAnany 2010; Wells and Davis-Salazar 2007) thereby further complicating the process of clearly demarcating specific functions of *sacbeob*.

Conclusion

The end of the Preclassic was a time of demographic, political, and social transformations. Numerous sites across the Northern Lowlands have evidence of an apogee during the Late Preclassic. Formalized styles, such as megalithic architecture and protoclassic ceramics, emerge during this transitional period, likely as a materialization of a more vertically distinguished sociopolitical landscape. This was a time of balancing individual aspirations of leaders within the confines of a more communal ideology of group wellbeing; internal contradictions are inherent and across the Yucatan Peninsula the emergence of new material citations of social distinction begin to emerge both at the communal and household scales. With long-distance causeways physically integrating larger social networks, the scale of daily negotiations between households and leaders and followers would have changed, possibly titling the scale in favor of more elite actors (e.g., Pauketat 2000a, 2000b). While Preclassic life in the Northern Lowlands lacked the material grandeur of areas like the El Mirador basin, within the confines of acceptable practices of materially citing household wellbeing and community prosperity, places like Komchen and Ucanha built impressive monumental architecture and saw the apex of population during the Preclassic.

CHAPTER 4: SITUATING UCANHA ALONG THE UCÍ-CANSAHCAB CAUSEWAY: SURVEY, MAPPING, AND ATTRACTING SETTLEMENT

"Matters of meaning and culture should not be ignored in discussing settlement transformation…and that purely ecological explanations, while crucial to discerning patterns of subsistence and collective maintenance, do not in and of themselves suffice in explaining *why* cities exist and *when* cities exist, although they do help determine *where* cities may flourish. Kingship and kings must have played a role in all such communities, regardless of the pragmatic decisions that influenced decisions to settle or depart by individual families or lineages." –Houston et al. 2003:239-240

Introduction

In this chapter I introduce details about the ruin of Ucanha and situate it within the Ucí-Cansahcab Regional Integration Project (UCRIP) and the northern plains of the Northern Maya Lowlands. The broader process of physical integration of the Ucí-Cansahcab area via a long-distance causeway backgrounds my research; however, it is the more fine-grained analysis of daily life at the household and community levels of Ucanha that drive the scope of this dissertation. Data from survey, mapping, and LiDAR not only provide insights into settlement pattern and demographic trends, they also highlight factors that brought people to Ucanha during this transitory time. As will be discussed, the built landscape of Ucanha channeled people to it, both physically through a series of roadways and socially through ritual processions. Moreover, ecological resources, such as caves and a large rejollada, would have also been a centripetal force that facilitated population aggregation during the Late Preclassic, a period of great population increase. Finally, the presence of a Late Preclassic stucco-covered building with painted red mat motifs—iconography associated with rulership—and a later building with stucco masks flanking a stairway indicate central authority was a part of Ucanha's sociopolitical landscape during this period. Ultimately, this chapter sets the stage for further in-depth discussions about household quality of life and community prosperity during and after integration.

Project Background

Sometime during the Terminal Preclassic period (0 – 250 CE), an 18 km-long causeway (or *sacbé*) system, consisting of three separate causeway segments, was constructed between the ancient Maya sites of Ucí and Cansahcab in the Northern Maya Lowlands (Figure 1.1). Each causeway segment may have been organized by different leaders and at slightly different times, as I discuss further below. These construction efforts would have required the labor of hundreds, if not thousands, of people and amount to one of four long-distance causeway systems in the Northern Lowlands. The Ucí-Cansahcab causeway (UCC) physically integrated four sites with monumental architecture of varying size and smaller rural settlements. These sites with monumental architecture (i.e., Ucí, Kancab, Ucanha, and Cansahcab) were first investigated between 1979 and 1982 by Ruben Maldonado Cárdenas (1979, 1995). Ucí, the western-most site which is classified as a Rank II site according to the Atlas Arqueológico de Yucatán (Garza and Kurjack 1980), is the largest settlement with an estimated expanse of 7.5 km^2 that includes an estimated 900 residential structures and 120,000 cubic meters of monumental architecture. Eight km to the east of Ucí, Kancab, classified as a Rank IV site, covers roughly 1.25 km^2, containing approximately 150 residential units and only 20,000 cubic meters of monumental architecture. Five km east of Kancab is Ucanha, which is also classified as a Rank IV. However, it is nearly twice the size of Kancab covering an area of 2.2 km^2 with an estimated 416 households and 36,000 cubic meters of monumental architecture. Finally, the eastern-most site of Cansahcab is also classified as a Rank IV site. It is heavily disturbed by a modern municipal center of the same name. Nevertheless, opportunistic pedestrian survey coupled with LiDAR data indicate Cansahcab was smaller than Ucanha (Hutson et al. 2016).

The Ucí-Cansahcab Regional Integration Project (UCRIP) was initiated by Scott Hutson in 2008 and sought to answer two questions: 1) How did the process of integration affect local communities? 2) How did the actions of those communities condition and shape the process? Since the project is rooted in a relational approach to how differentially-positioned actors negotiated this process of physical integration via the long-distance causeway, which itself is the resultant materialization of this process, it was critical to gather data from a wide array of contexts across this micro-region in order tack between different scales of interactions amongst human and non-human agents (e.g., Pauketat & Alt 2005). A decade of research both on and off the UCC, in hinterland settlements and the larger centers of Ucí, Kancab, and Ucanha, has included a variety of field methods, including full-coverage survey, total station and LiDAR mapping, systematic test pitting in monumental and residential contexts, and broad horizontal excavations of several residential structures. This work provided a robust data set to address broader questions. It is within these larger questions of political, economic, and social interactions that my dissertation is situated. Nevertheless, my project seeks to provide a fine-grained view from the perspective of the inhabitants of Ucanha, both at the community and household levels, through extensive excavations and soil chemistry analyses and seeks to address how an expected quality of life at the household level and community prosperity were affected by these collections of negotiation via this process of integration.

Survey, Mapping, and LiDAR of Ucanha

Survey and LiDAR

In order to address broader questions of integration during the Late Preclassic, UCRIP conducted a full-coverage pedestrian survey of an 8km long and 500m wide transect along the UCC from Ucí to Kancab—250 m north and south of the causeway—as well as transects (often but not always 500 m wide) to the cardinal directions around the large sites of Ucí, Kancab, and Ucanha, covering an area of 13.84 km^2. Surveyors walking the transects were spaced either 10 m to 15 m apart (depending on visibility) using the "fishbone" method (Puleston 1974) and all features were mapped with tape and compass, sketched into a field notebook, marked with a GPS point, and later plotted in ArcMap. These survey data were augmented and cross-checked with 26 km^2 of LiDAR coverage along the eastern part of the UCC running from Kancab to Cansahcab (Figure 4.1). Of the 115 excavated contexts at Ucí, Kancab, Ucanha, and in hinterland areas along the causeway, the overwhelming majority of platforms have a Late Preclassic occupation, suggesting the process of regional integration would have been witnessed, contested, negotiated, and facilitated by a variety of stakeholders.

Figure 4.1 Map of Maya world highlighting project area and coverage of pedestrian survey and LiDAR. Map courtesy of Scott Hutson.

Before discussing the specifics of Ucanha, it should be noted that LiDAR mapping and pedestrian surveys also give insight into the construction of the causeway and settlement hierarchy. Kurjack and Andrews (1976) proposed that the causeway was organized as a single project by leaders at Ucí. Since the *sacbé* does not continue through the site centers of the major sites on the UCC, Maldonado Cárdenas (1995:72-73) posited it was built in stages from Ucí to Kancab and Ucanha to Cansahcab, as two micro-polities vying for power, and then connected in the middle once Ucí emerged as the micro-regional power. LiDAR and survey data of rural areas between Ucí and Cansahcab bolster this claim: settlement density between Kancab and Ucanha (3.8 platforms per km^2) was significantly less than settlement density between Ucí and Kancab (15.8 platforms per km^2) and between Ucanha and Cansahcab (18.5 platforms per km^2), suggesting this area was a buffer zone separating the micro-polities of Ucí and Ucanha (Hutson et al. 2016; see Figure 4.2). Furthermore, excavations at Kancab and Ucí show a stronger Middle Preclassic occupation than at Ucanha, which probably afforded Ucí an advantage over Ucanha in the race to attract followers, a common practice during the Late Preclassic sociopolitical landscape (Peniche May 2012; Ringle 1999). The presence of Late Preclassic structures at both Ucí (i.e., a palace-sized platform) and Ucanha (i.e., stucco masks and *p'op* motifs) that evoke centralized authority further anchor the process of integration amongst the backdrop of elite factions vying for broader regional control.

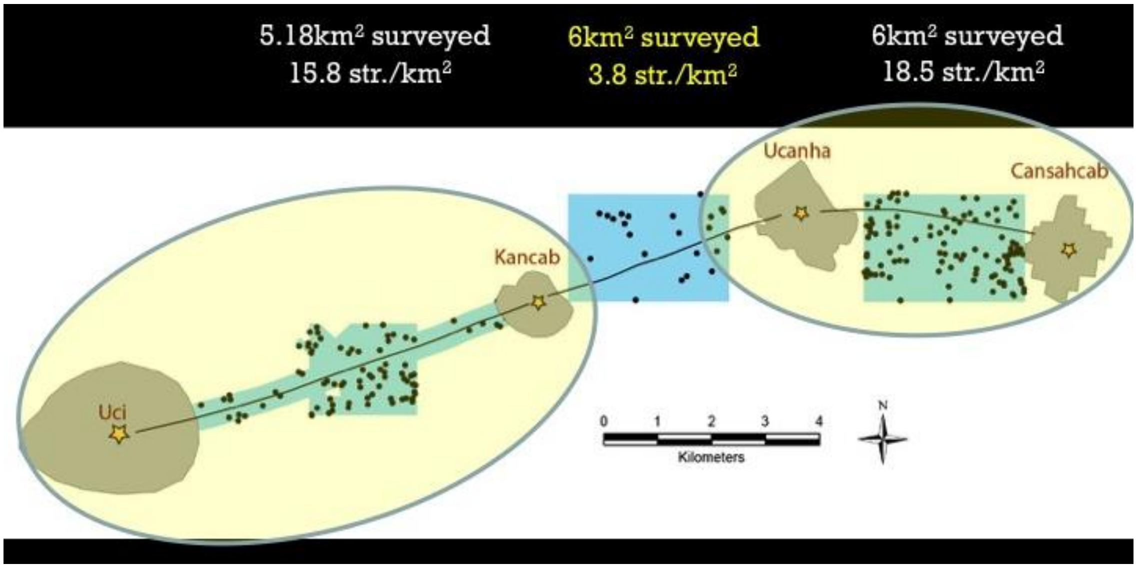

Figure 4.2. Map of pedestrian survey and LiDAR coverage with settlement densities between sites with monumental architecture. Map courtesy of Scott Hutson.

Mapping

At Ucanha, surveying and mapping were initiated by Rubén Maldonado Cárdenas (1979, 1995) as part of a larger causeway project focused on Aké and Izamal between 1979 and 1982. These efforts mapped the majority of the monumental architecture and a block of approximately 24 hectares extending 650 m to the south of the central plaza. In total, Maldonado Cárdenas mapped 155 structures and an area of 38 ha. In the summer of 2013, Scott Hutson, with the help of local knowledge and labor, surveyed and mapped additional portions of Ucanha in three survey blocks: one to the east, one to the south, and one to the north. This fieldwork added another 89.2 ha to the map of Ucanha (Figures 4.3 and 4.4). In 2014, Hutson extended survey to bring the total area covered to 100.7 ha. LiDAR mapping in 2014 provided a clearer picture of settlement falloff and allowed us to more accurately draw the boundary of Ucanha (Figures 4.3 and 4.4).

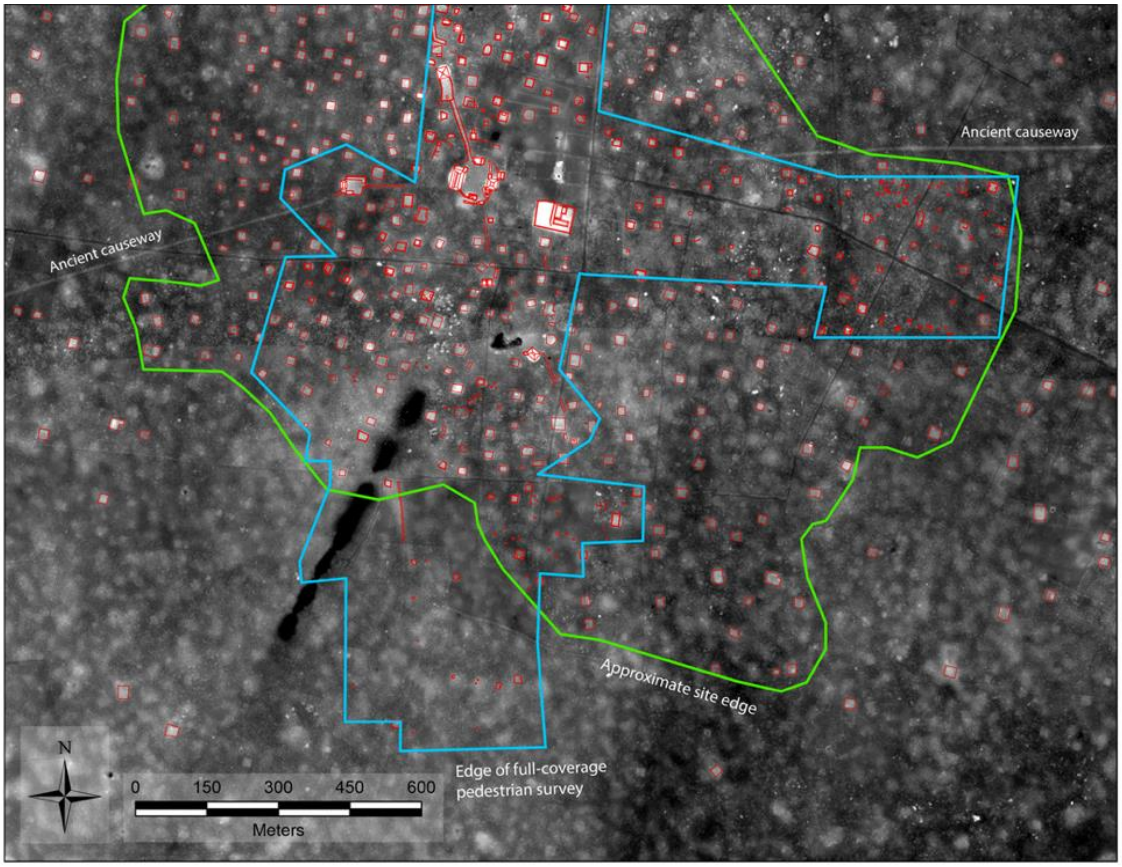

Figure 4.3: LiDAR map of Ucanha with areal extent of pedestrian survey outlined in blue and site boundary outline in green. Map courtesy of Scott Hutson.

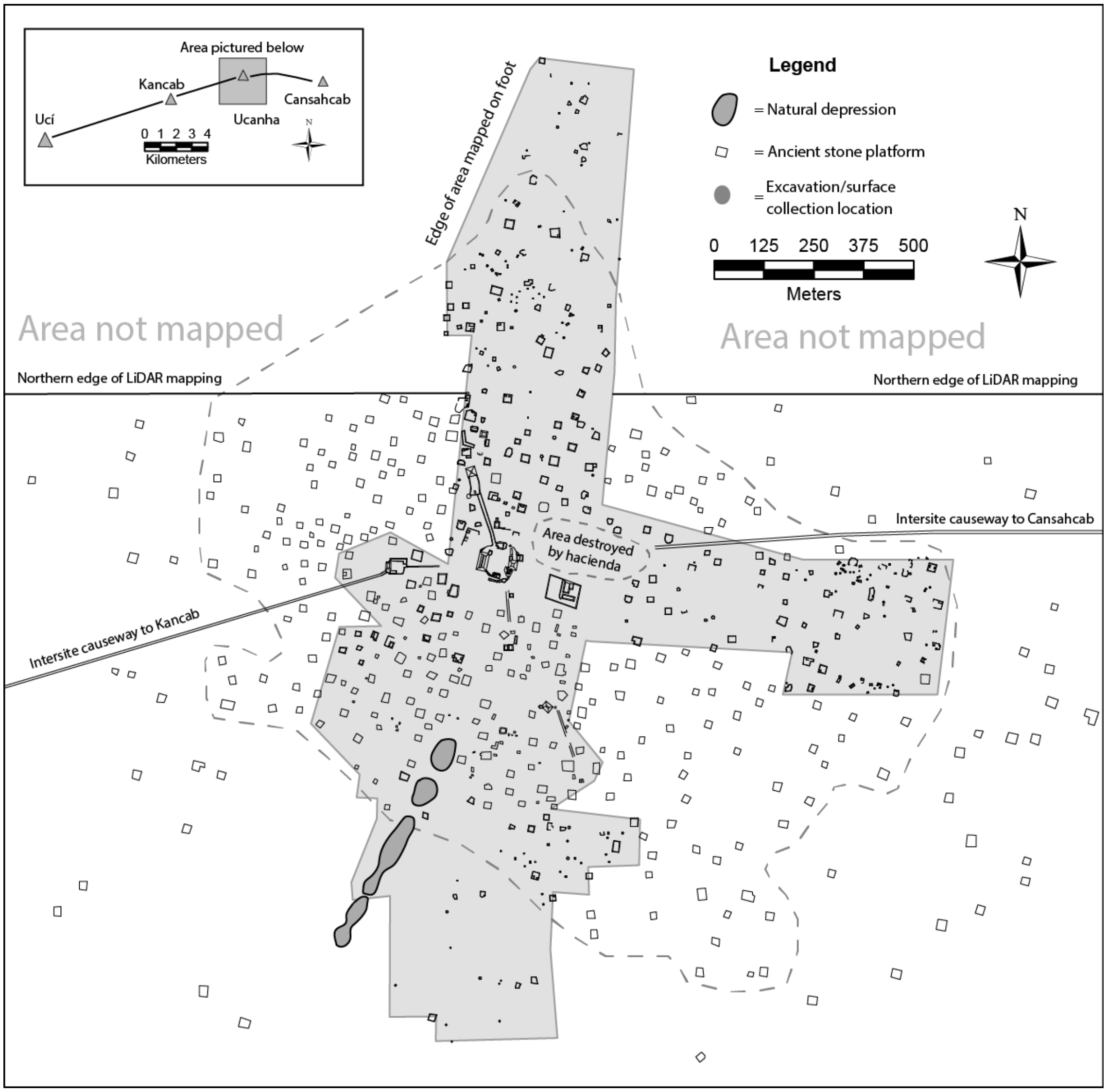

Figure 4.4: Map of Ucanha showing areal extent of pedestrian survey in light gray with site boundary by dotted line. Map courtesy of Scott Hutson.

The east block extended 1100 m east of the central plaza, varied from 235 m to 340 m wide, and coverd 27 ha. Although the architecture in this block was not as well preserved as in the other blocks, 118 features were mapped: 108 structures, 9 metates, and one ancient well. Of the 108 structures, 32 were large platforms (>100 m^2 surface area), 31 were small platforms (<100 m^2 surface area), and 23 were smaller rubble mounds locally refered to as *ch'ich* mounds. This distinction between large and small platforms is not merely heurisitc as a histogram show a natural break of surface area at this size (Hutson 2013b:Figure 2.23). Additionally, 16 superstructures were mapped on the 32 largest platforms, with an average area of 27.1 m^2 and volume of 12.6 m^3. It is likely these were dwellings considering the average size matches ethnorgaphic studies of modern Maya dwellings (Wauchope 1938). Finally, 28 of platforms had megalithic retaining walls and 21 of the 30 largest platforms are megalithic. Together, there were 45 residential platforms with a density of 167 residential platforms per square km. Four linear features, including the Ucanha to Cansahcab part of the causeway, were also mapped. This portion of the causeway starts 408 m east of the central plaza and does not connect to any ancient structure; yet there was noticeable historic period disturbance in this area, and it likely came closesr to the Ucanha site core in antiqutiy. Nonetheless, if it did extend it would connect with Str. 148, which is a 7 m-tall pyramid that forms the east side of the Central Plaza (Figure 4.5). The sacbé as documented in the east block is roughly 6 m wide, 20 – 40 cm in height, and has an orientation of 88.7 degrees. Construction of the retention walls of this roadway varies with some parts being built using megalithic stones and other parts consisting of small rubble. This uneven presence of megalithic stones in the retaining walls suggests scavenging of megalithic stones during a later period or minimal “state” oversight and/or differnet work groups durign construction (Dillehay et al. 2012; Lucero 2007), which were likley mobilzed through ritual feasting and/or gift-giving (Dietler and Herbich 2001; Wells 2007).

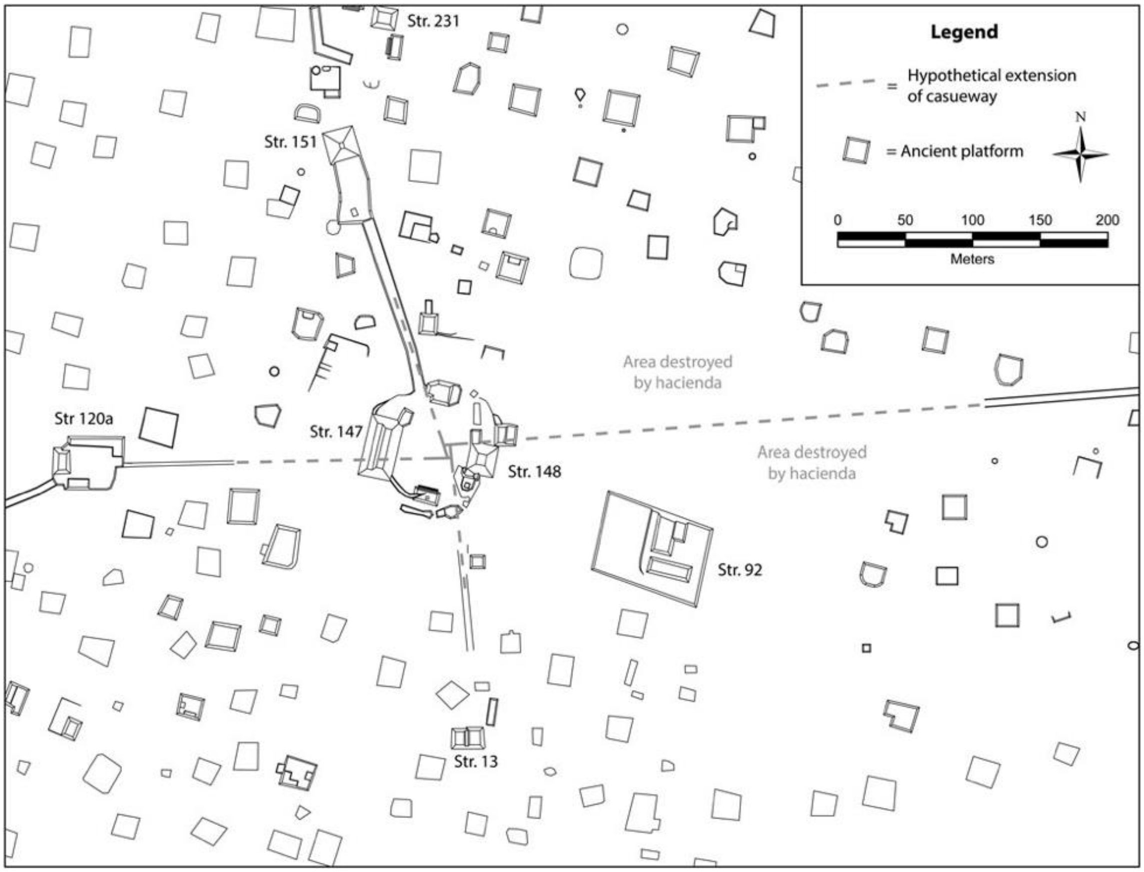

Figure 4.5: Central part of Ucanha showing roadways and hypothetical convergence at Central Group. Map courtesy of Scott Hutson.

The south block included portions already mapped by Maldonado Cárdenas (650 m south and 37.9 ha); however, he didn't encounter the southern boundary of Ucanha so we extended survey efforts to a total of 1215 m to the south, measuring 416 m wide and covering 27.2 ha. Forty features were encountered, including 34 structures (11 large [with four superstructures] and 16 small), one ch'ich mound, one linear feature, and one small intra-site causeway. In this block only seven structures are built in the megalithc sytle; however, seven of the 10 largest platforms are of this style. Together with areas mapped by Maldonado Cárdenas, we identified 87 residential platforms with a settlement density of 169 residential units per square km. Interestingly, the small causeway does not connect any structures and measures 3 m wide by 10 cm high and only runs for 127 m. Our efforts located a significant density fall-off 700 m south of the central plaza, thereby delimiting the southern boundary of Ucanha.

The north block proved to be more densely settled and also exhibited the widest variety of architecture. This survey block extended 1250 m north with an average width of 370 m and covered 46.7 ha. In total, 210 features were mapped, including 74 large structures [with 21 superstructures], 49 small structures, 25 ch'ich mounds, 27 metates, four wells, two albarradas, one cave, and one sascabera. The superstructures in this block have a larger average size (45.8 m^2 and 19.5 m^3) than those in the east block. Within the north block, the large platforms are larger and more numerous compared to the other survey blocks and there are more megalithic structures. For example, there are 23 platforms that are 1.5 m or taller and 19 platforms, which are all megalithic, have a volume of 500 m^3 or larger whereas the other blocks have no structures with a volume over 500 m^3. In total, 55 structures were built in the megalithic style and 34 of the 36 largest platforms were megalithic. Furthermore, there is a slight negative correlation between distance from the central group and platform volume (Pearson's r value of -0.38), suggesting either some degree of zonation tendencies with some degree of clustering of larger structures near the center (Chase and Chase 2004; Folan et al. 2009) in the northern part of Ucanha, an expression of first founder's principle (Carmean 1991; McAnany 1995), or some different function than other parts of the site. Settlement density, however, is similar to the other blocks with 239 residential units per sq. km.

Survey results indicate several interesting trends about the built environment of Ucanha. First, in every transect the vast majority of the largest structures were constructed in the megalithic style. This style would have required more labor and social coordination than non-megalithic dwellings built during the Late Preclassic (Hutson and Davies 2015); therefore, it would have been a variable of social distinction. Since the physical construction of dwellings is an important component of social differentiation and the production of embodied knowledges (Hendon 2005; Hutson 2010; Tringham 2000), households living on megalithic platforms would have also had different dispositions and quality of life expectations than non-megalithic households. Secondly, in the east and south block, the largest platforms (Str. 446 and Str. 502, respectively) are located near the boundary of the site, over 1 km away from the central group. While the largest structure in the north block (Str. 231) is not located near the northern boundary, two platforms belonging to the "large" category (Str. 485 and Str. 367, measuring 175 sq m and 276 sq m respectively) help define this boundary. The placement of these large platforms, all of which contain megalithic architecture, near the site boundary was possibly part of centripetal strategies to draw hinterland populations to Ucanha through sporadic feasting events as brokers between core and hinterland populations (Yaeger and Robin 2004). Since the size of these platforms likely indicates higher QOL insofar as the ability to mobilize labor is a proximate measurement of wealth (Carmean 1991; Smith 1987, 2015), it is also possible these households monitored out-field agricultural practices (Pyburn 1998). Thirdly, site settlement density of 189 residential compounds per km2 is nearly twice as high as all sites located on the UCC with an estimated 416 residential units dispersed throughout 2.2 km2 (Hutson and Welch 2014:Table 1). This relatively high density and "open" settlement pattern (i.e., no walled compounds or *plazuela* groups) would have yielded a more generalized sense of trust, and a stronger sense of community, through more frequent interpersonal engagements, both visually and socially

(Golden and Scherer 2013; Hutson et al. 2008). This settlement pattern also allowed people to see displays of differentiation from nearby households, possibly leading more wealthy households to conceal their wealth from neighboring eyes in order to minimize overt statements of social distinction that might threaten social cohesion by transgressing a moral appeal to communalism (Hendon 2000).

Total Station Mapping

During the 2013 field season, total station mapping spearheaded by Daniel Vallejo-Calíz and Joseph Stevenson at several monumental groups, including the Central Group, the North Group, the West Group, and a large pyramid to the south of the central group as well as at a large, linear rejollada in the south of the site, provided more detail about the built and natural landscape of Ucanha. Additionally, Str. 92, a palace measuring 80 x 55 m at the base and standing 2 m tall, was also mapped Mapping was done using a Sokkia SCT-6 total station in conjunction with a Garmin 72H GPS and Survey Pro and then realized using ArcGIS 10.1. All of these architectural contexts had substantial construction phases during the Late Preclassic and were salient focal points on the landscape through the process of integration and community building.

The Central Group consists of 16 structures and three walls that form a 50 m E/W by 70 m N/S plaza, which was artificially raised 1 m above the natural surface (Figure 4.6). The two largest structures are pyramids that form the west and east sides of the plaza: Str. 147 (35 m E/W by 48 m N/S with an altitude of 8.5 m and a volume of roughly 5800m^3) and Str. 148 (23 m E/W by 25 m N/S with an altitude of 7.7 m and a volume of roughly 3000m^3). A 21 m E/W by 11 m N/S structure (Str. 155) that stands over 2 m high forms the southern boundary of the grand plaza. Additionally, Str. 155

contains a megalithic staircase that is 15 m wide that extends onto the plaza 1.5 m north of the basal platform. Interestingly, two large, nicely shaped megaliths (1.2 m by 0.6 m by 0.3 m) were erected vertically at the northeastern and northwestern corners of Str. 155, possibly indexing the idea of a stela (Figure 4.7). On top of Str. 155, there is a 2 m by 2m foundation (Str. 155a); given its small size, it was likely a shrine as opposed to a living area. Finally, to the north, Str. 149, measuring 25 m E/W by 17 m N/S, is a two-tiered platform—with the eastern area 1 m tall and the western area 2.5 m tall—that overlooks Sacbé 2, which connects the Central Group to a raised platform (Str. 150), which is roughly 150 m2 and abuts the tallest pyramid at Ucanha, Str. 151. Thus on the north and south sides of the Central Plaza there are two relatively tall, flat structures, while on the east and west sides there are two pyramids, likely representing the path of the sun and the procession of time (Coggins 1980; Mathews and Garber 2004; Stanton and Freidel 2005). As will be discussed later, this layout of a large open plaza flanked by East-West pyramids with raised stage-like spaces located at the nexus of roadways radiating outward roughly in the cardinal directions would have been a performative place, a salient node on the ritual landscape, that would have brought the community together in order to build trust and facilitate moral authority. The Central Group was an anchor of communal interaction, both through the communal labor that produced this sacred space and the bodies and things that subsequently animated it through social interactions framed by this grandiose backdrop.

Another interesting feature of the Central Group is a series of walls that enclose the central plaza. While various structures in the northeastern and southeastern corners of the central plaza restrict access, a series of walls built in the south and at the northwestern and northeastern corners more intentionally impede movement in and out of the central plaza. Indeed, Muro A runs for 20 m and continues on top of Str. 155 for an additional 8 m. Megaliths form the southern part of this retention wall suggesting it was built sometime during the end of the Late Preclassic. Given the lack of evidence of warfare (e.g., spear points, large burned areas, epigraphic records, perimortem trauma) at Ucanha, at both monumental and domestic contexts, coupled with the fact that walls are no taller than 80 cm, these walls were probably constructed to either partition this space as sacred and/or to impede the access of nonelite peoples into this area. As will be discussed later, this central plaza was the axis mundi of the site, a cosmically charged place that would have been a source of communal pride as well as centripetal feature that brought people to Ucanha. Did restricted access to this sacred space become a point of community contention? Numerous examples throughout Mesoamerica show an increase in restricted access of a previously more communal space towards a more private, elite-focused area has been a source of communal discontent (Brown and Garber 2008; Clark 2004; Joyce 2008, 2009; Joyce et al. 2001).

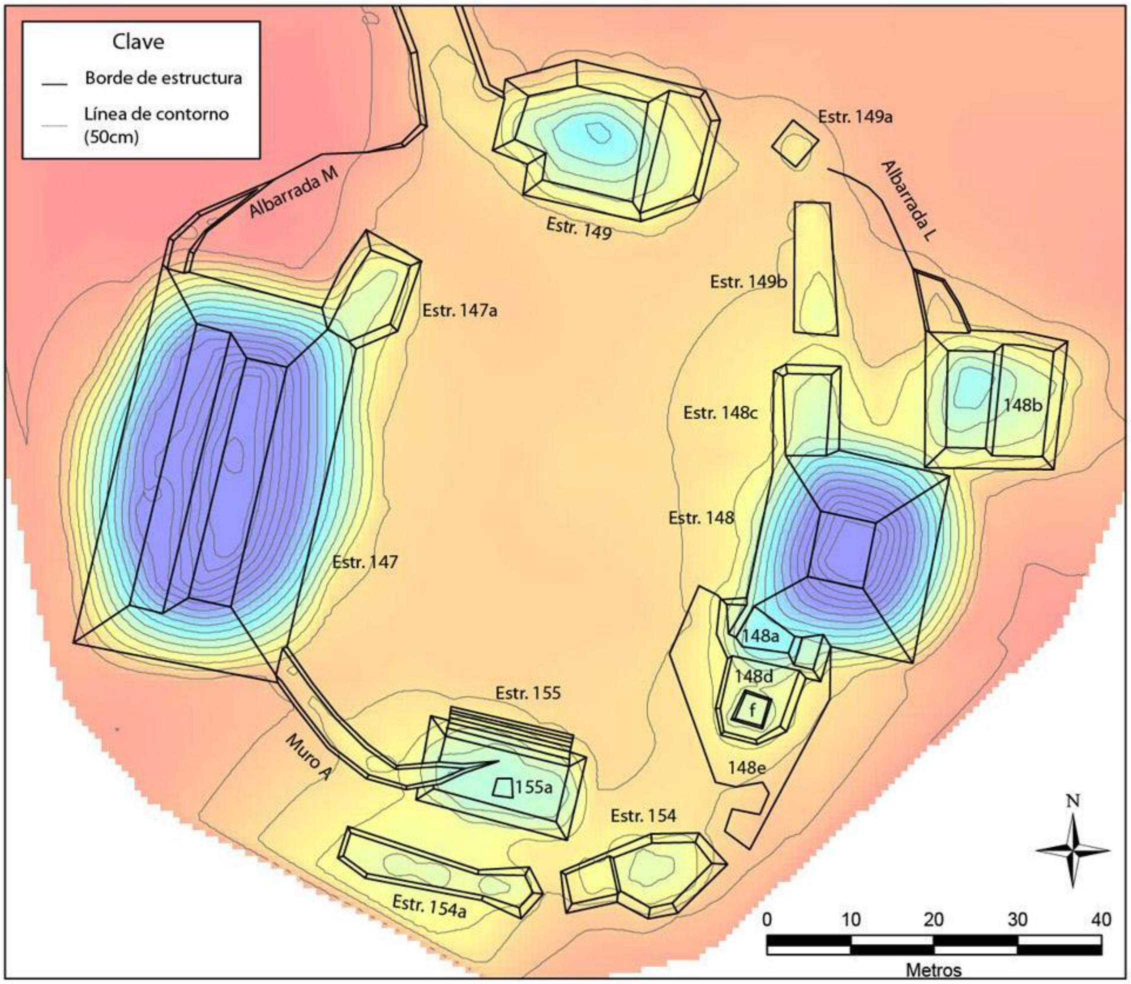

Figure 4.6: Topographic map of the Central Group where each gray topographic line represents 50 cm. Map courtesy of Scott Hutson and Joseph Stevenson.

Figure 4.7. A large megalithic block placed vertically at the corner of Structure 155.

The North Group consists of the largest pyramid at Ucanha as well as a raised platform and intra-site causeway (Sacbé 2) which connects this raised platform to the central group (Figure 4.8). This pyramid (Str. 151) has a base that measures 32 m E/W by 30 m N/S with a height of 10 m. The raised platform (Str. 150) measures 25 m E/W by 45 m N/S, varies between 1.5 – 2 m above the natural surface, and has an orientation of 165°, which is roughly parallel with Sacbé 2. On top of Str. 150 there is a rectangular megalithic foundation (Str. 150a) that measures 3.9 m E/W by 5.4 m N/S, suggesting this raised platform was constructed during the Late Preclassic. Sacbé 2 radiates from the central plaza, just to the west of Str. 149, and extends for 128 m ending at the south side of Str. 150. It varies in width from 8.5 – 10 m and in height from 0.6 – 1 m and has an orientation of 160°. As will be discussed later, this area was likely constructed during the

Late Preclassic and would have been an important place for ritual processions and community-level social interactions. The presence of a cave to the east of Sacbé 2 and north of the Central Group would have augmented the sacredness of this built landscape and its location near the "heart" of the site was likely intentional. Since some Mayanists claim that the north is intimately related to the celestial realm of ancestors (Ashmore and Sabloff 2002; cf. Smith 2003) and many Preclassic monumental constructions were raised to tutelary deities as a source of communal pride (Glover and Stanton 2010; Ringle 1999), the North Group would have also been a critical node of communal integration.

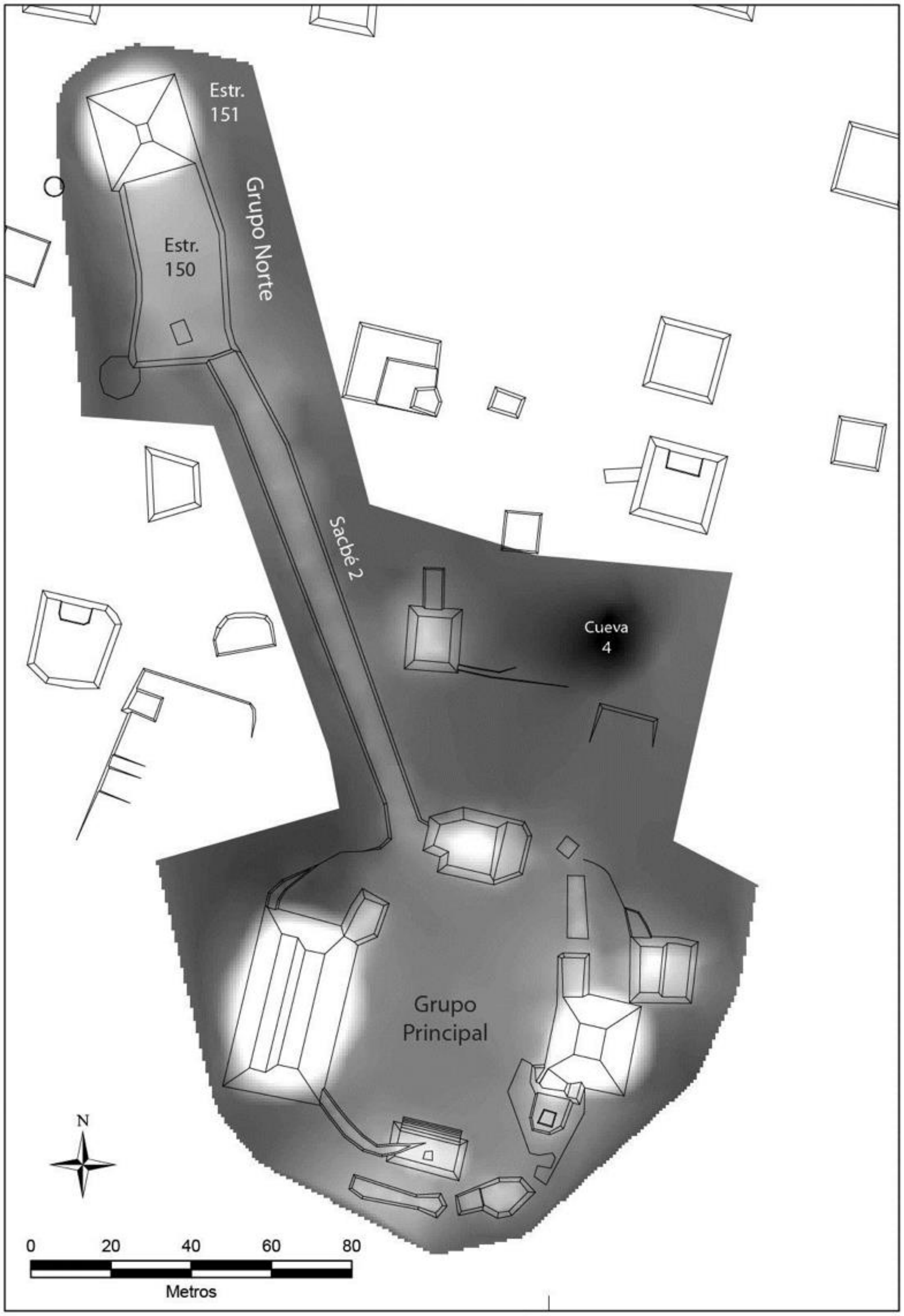

Figure 4.8: Map of the Central Group and North Group with Sacbé 2 connecting the two. Map courtesy of Scott Hutson.

Approximately 500 m south of the Central Group, there is another pyramid-causeway-cave group albeit without the raised platform seen in the Northern Group. Str. 1 consists of a pyramid measuring 23 m by 19 m with a height of 7.3 m (Figure 4.9). The pyramid includes a well-preserved superstructure with several courses of stone that measures 3 m by 2 m. There appears to be modern damage on the north side of the pyramid. This pyramid also contains an adjacent raised platform (Str. 1a); however, it is smaller than the platform associated with the pyramid in the North Group, measuring only 7 m by 8 m with a height of 1 m. The southern pyramid is also located near two caves that contain water. Incorporating pyramids into the natural environment, especially caves with water, is a common practice of metaphorically creating a charged, sacred space of creation (Brady and Ashmore 1999). Indeed, this tableau references the watery mountain of creation referenced in the Popol Vuh and would have added to the constellation of centripetal forces at Ucanha: a grandiose sacred landscape that would have offered a more intimate and salient channeling of the supernatural. An intra-site causeway runs to the south of Str. 1 and connects parts of southern Ucanha to this important node on the built landscape.

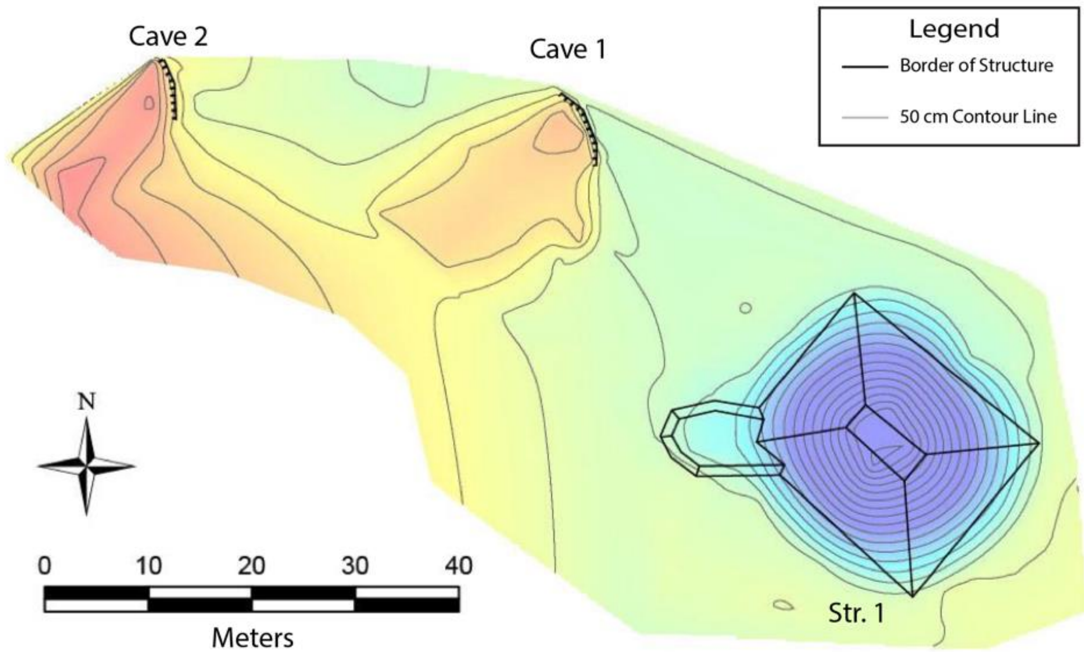

Figure 4.9: Topographic map of Structure 1 with two caves just to northwest. Map courtesy of Scott Hutson.

Finally, the southern portion of a long, linear karst sinkhole, called a *rejollada*, was mapped during the summer of 2013 (Figure 4.10). While most *rejolladas* are semi-circular, the linearity of this one makes it a bit odd. This feature consists of three linear depressions, two of which were mapped by the Proyecto Aké (Maldonado C. 1995), and a small source of water (measuring 0.63 m^2) that is encircled by a small stone wall, which is located in the southernmost part of the *rejollada*. On the southeast side of this (likely historic) enclosure and touching the water, there is a large rock, about 2 m^3, which is known locally as the "*areolito*" (meaning meteorite) and below this water source there is a small cave (Figure 4.11). According to local legend, this rock was a meteorite that hit in the north of the *rejollada* and then bounced twice to form the three linear depressions. In fact, the rock is local limestone that has spalled off the steep southern edge of the rejollada. Total station mapping revealed this southern third of the *rejollada* consisted of two separate parts: the north section measures 89 m by 26 m and the south section measures 67 m by 17 m with an average depth of 2.8 m and 5.4 m, respectively. Interestingly, the water source *areolito* complex and the central axis of the *rejollada* align with the palace structure (Str. 92), suggesting the placement of important buildings was intentionally tied to sacred natural features. At the southern end of the northernmost part of this rejollada there is cave with standing water, which could have also been exploited during unpredictable fluctuations of the dry and rainy seasons. As will be discussed in more detail shortly, this *rejollada* would have been an important ecological resource as well as an ideologically charged node on the landscape.

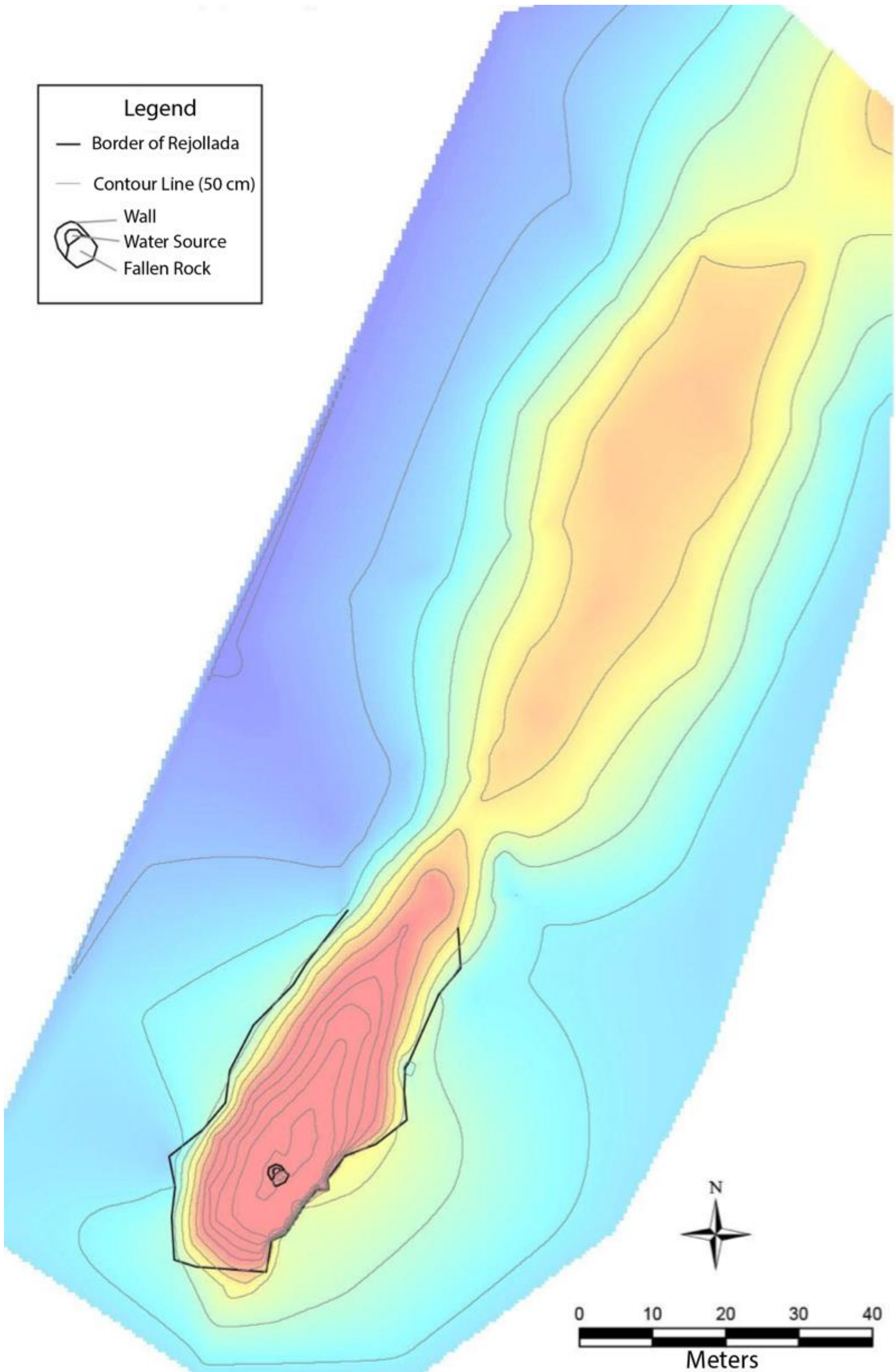

Figure 4.10: Topographic map of linear depression (*rejollada*) with water source and rock in southern part. Map courtesy of Scott Hutson.

Figure 4.11. Picture of stones encircling large rock (*areolito)* on the right side of the photo. Taken facing north.

Centripetal Forces: Enticing Community Formation at Preclassic Ucanha

Based on ceramics recovered form test pitting and opportunistic surface collections (which will be discussed in more detail in the next chapter), Ucanha reached its demographic height during the Late Preclassic. From all contexts producing ceramics (n = 36), 88.89% (or 32) had a Late Preclassic occupation and roughly 42% of all ceramics recovered dated to this period. If this trend holds true for the 416 residential platforms, Ucanha's population would have been roughly 2,000 people, applying calculations from Rice and Culbert (1990). While population estimates are difficult, this estimate conservatively figures 5.5 people per residential platform; it is entirely possible that more than one family unit lived on these large platforms. However, without standing architectural superstructures, it is more difficult to estimate the number of domestic units per residential platform.

A consistent question that looms over Maya studies of sociality and community is: how do relatively dispersed settlement patterns offer something to their inhabitants at a level beyond provisioning the household? Numerous studies chronicle the fight between centripetal and centrifugal forces that play out across the Maya world (e.g., see Chase et al. 1990; Freidel 1981; Golden and Scherer 2013; Houston et al. 2003; Webster 2005; Yaeger 2003). While larger-scale intensive agricultural practices such as terracing and raised fields are known in other parts of the Lowlands, extensive swidden agriculture, which requires large tracks of land and disperses the population, appears to have been common in the Northern Lowlands. As mentioned earlier, the Northern Plains is an area of variable rainfall with the northwest around Chunchucmil and Dzibilchaltun being rather dry (~50 cm of precipitation a year) and to the southeast around Cobá being much wetter (~200 cm of precipitation a year). Ucanha's location near Merida and only 20 km from the coast is on the drier side at approximately 100 cm of precipitation annually. Unlike other regions in the Southern Lowlands, this area lacks the type of ecological heterogeneity that would afford economic opportunities for ecological specialization (cf. Scarborough and Valdez 2009). However, coastal salt flats were an important economic feature of the Northern Plains, spurring growth at sites like Xcambo. Considering sites like Ucanha and Komchen, for examples, have rather poor agricultural capabilities and are not located near other exploitable ecological resources, how did rather substantial Preclassic settlements form at these places? Sizable occupations in these ecological conditions defy environmentally deterministic models, thereby bringing an array of social and other economic factors into focus.

I argue while ecological factors, such as year-round water, would have been enticing for Late Preclassic peoples, the intentional construction of an ideologically salient sacred landscape and a site layout that afforded social interaction through ritual processions and other large-scale interpersonal dialogue would have been just as important. Additionally, the discovery of a building covered in stucco and painted with a red cross-hatched motif that is reminiscent of the mat or *p'op* motif, a symbol that has been associated with rulership, and intricately-made stucco architectural masks shows that some form of central authority could have coordinated efforts to entice followers to Ucanha during the Late Preclassic.

Sacred Settlements and Quadripartite Creation

Among the Maya, the ontological divide between objects-as-not-alive-things and subjects-as-alive-things is not clearly drawn (Gossen 1994; Harrison-Buck 2004; Houston and Stuart 1998; Hutson et al. in press). As such, situating the build landscape within common spatial tropes that reference the moments of creation and the ability to traverse metaphysical realms was a practice that not only animated sites but also propagated a larger sense of communal importance. Epigraphic, (Houston et al. 2006; Houston and Stuart 1996; Stuart 1998), linguistic (Hanks 1990; Laughlin 1975), and ethnographic (Boremanse 1998; Sosa 1985; Vogt 1969; Wisdom 1940) data suggest, some things were animated with a life-source or *ch'ulel* and that the world around them was viewed as a microcosm of nested levels (Gillespie 2000c; Mathews and Garber 2004). The Maya envisioned the world as a three-tiered, quadripartite entity in which the center formed an axis mundi, a place of great power and cosmological order, and cardinal directions were imbued with supernatural significance. This quincunx—four corners and a center—has deep roots in Mesoamerican ideology, going as far back as the Olmec (Reilly 1995; Schele 1995), and is frequently cited through a variety of media and various scales including caches, individual artifacts, buildings, and site layouts (Gillespie 2000c; Mathews and Garber 2004). This cosmological model was often used as a reference to the procession of time and the beginning of the cosmos (Coggins 1980) as well as the ability to open a portal between this three-tiered cosmos and access supernatural deities (Freidel et al. 1993; Schele and Miller 1986). Importantly, representations of this cosmological model are also seen in a variety of assemblages (Lohse 2007; Mathews and Garber 2004; Robin 2002), suggesting a referential salience across socioeconomic classes. By forging a "centered" place, the Maya ritually amalgamated the realm of humankind with that of the sacerdotal realm of the gods and ancestors. Moreover, the center or axis mundi was ideologically viewed as a conduit through which offerings made by humans were reciprocated by the divine. The reenactment of the creation myth through a material narrative was a vehicle for the metaphysical life force *ch'ulel* or *itz* to imbue an entity with a notion of completion. The ability to access the sacred with the force of a large-scale metaphor, at the level of the site, would have been an attractive force as populations were increasing and amalgamating during the Late Preclassic.

Moreover, using roads to form this quadripartite metaphor is a common practice among the Maya, with continual importance from ancient times until the present. For example, Wisdom's (1940:421) ethnographic work among the Chorti in Guatemala recounts how four roads that led outward to the cardinal directions were marked with crosses. Landa's ethnohistoric accounts of the Yucatan describe how each town had four roads aligned with the cardinal directions emanating from the center of the town. During special months, such as the *Uayeb*, a five day month of bad luck that ushered in the new year, the community would parade from the center to stone heaps at the termini of these roads in order to demarcate the town and to bring offerings to specific deities associated with the cardinal directions (Coe 1965; Tozzer 1941). Finally, several ancient sites in the Northern Lowlands have *sacbeob* arranged cardinally, including Ek Balam (Bey et al. 1997:239), Cobá (Folan et al. 2009), El Naranjal (Fedick and Taube 1995), and the nearby Kancab (Hutson and Welch 2014). While archaeologist should be cautious about blanketing interpretations of cosmological importance onto site layouts using modern and historic accounts (Normark 2008; Smith 2003), given the historical deep structural importance and its presence in numerous context, this quadripartite metaphor was surely a powerful reference to the sacred that resonated with a diverse crowd. Ucanha is another site that melded quadripartite roadways with an appeal a more intimate religious and social experience to attract followers via ritual processions.

As in more recent times, it is likely these intrasite causeways served as paths for ritual processions as well as other functions. Ringle (1999:207) argues *sacbeob* constructed during the Late Preclassic at sites like Komchen and Cerros were "in effect extended stages for ritual" that lead to large open areas with impressive architecture. Additionally, Ringle (1999) asserts during this time period it is likely different lineages were vying for power, as opposed to the solidified power of an apical king, so these ritual processions would serve to mitigate conflict through community level interactions, which would facilitate a sense of *communitas* and generalized trust. The cardinally-oriented sacbeob at Ucanha likely served a homologous function with three of the four cardinal roads terminating at relatively open architectural groups (Figure 4.12): to the north a 10 m tall pyramid (Str. 151) abuts a sizable raised platform; to the west a *plazuela* group (Str. 120a) with megalithic columns; and to the south a low-laying pyramid group (Str. 13). While no terminus group exists to the east of the Central Group, this area has been heavily disturbed by the construction of a Colonial hacienda; therefore, it is possible an architectural group did exist here in the past. Test pits at these three locations indicate the basal platforms of all of these groups were constructed during the Late Preclassic. Furthermore, if these roadways were extended they would converge in the middle of the plaza of the Central Group (Figure 4.5). Thus, the most parsimonious interpretation is that the *sacbeob* and associated termini groups were built intentionally as a way to place the quincunx into the design of Ucanha as a place of sacred power, a location of creation, and the center of the universe.

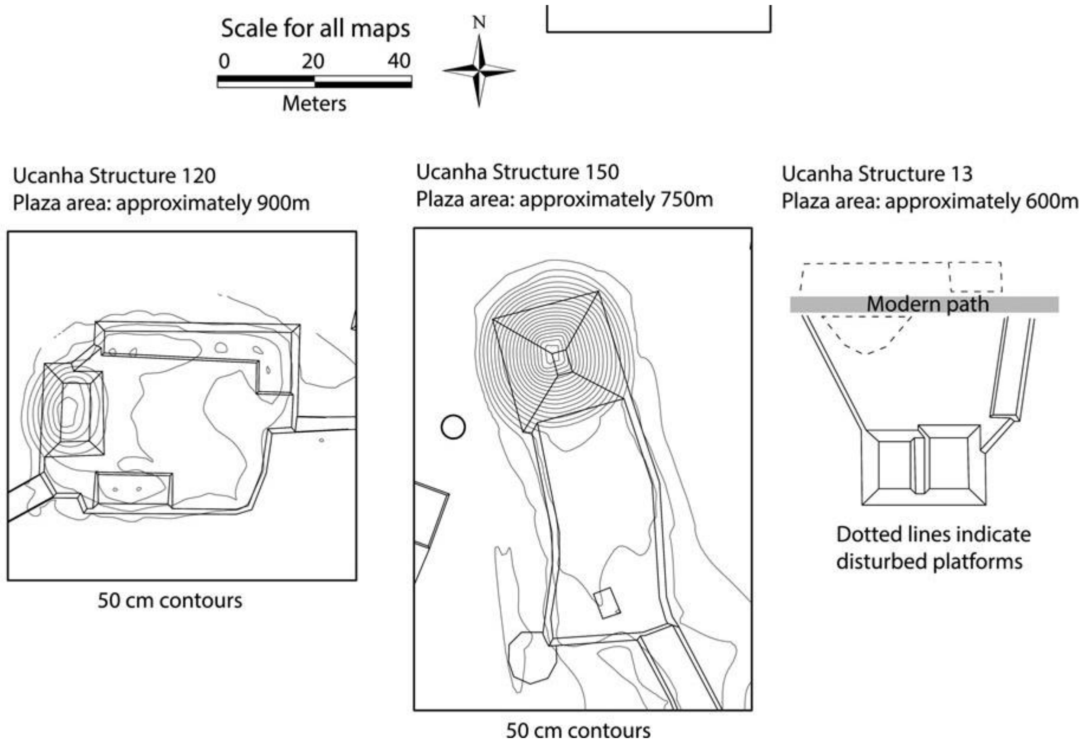

Figure 4.12: Terminus groups of Ucanha's roadways with estimated plaza areas. Map modified from Hutson and Welch 2014.

Water, Caves, and Chthonic Power

Since the Yucatán Peninsula lacks above-ground river systems and year-round access to water, hydrological resources such as caves and *cenotes* were important for everyday subsistence needs in addition to holding ideological significance. While areas nearer the Chicxulub crater's ring of cenotes and Chichen Itzá are pitted with large *cenotes* and seasonal *aguadas* (Munro-Stasiuk et al. 2014), the greater UCRIP area has few of the former and none of the latter. Rainfall is also rather unreliable since the roughly 85% of the annual average of 1000mm falls between May and October (Beach 1998); coupled with a high evapotranspiration rate, thin soils, and porous limestone bedrock, water management is a constant concern in the Northern Plains. Furthermore, the "prevalence and persistence of relatively 'arid' conditions in the Late Preclassic…would have acted to combat the tendency towards population dispersal by making a secure source of water more desirable" (Dunning 1999:66). Therefore, the management of these hydrological water was surely a critical factor for settlement during this period. Ucanha, which some local people have translated roughly as "taken water" from Yucatek Mayan, has a series of wet caves and wells that would have been enticing to increasingly aggregative Late Preclassic populations. Overall, eight wells and five cave openings were mapped at Ucanha. Indeed, the two largest settlements along the UCC, Ucí and Ucanha, both had access to year-round water sources and both incorporated these resources into site plans as sacred geography (Hutson and Welch 2014). Komchen, which flourished during the Preclassic and then was wholly abandoned, also had over 20 wells and several cenotes (Ringle and Andrews 1988:173). All of sites also reached their demographic apogee during the Late Preclassic suggesting these hydrological resources, along with other factors, were centripetal forces that helped community formation.

The cave, however, was not just an important ecological resource but also a salient symbol and an ideologically charged place on the landscape. It was a self-contradictory, polysemic dominant symbol envisioned as the following: a portal to the timeless, primordial realm of the ancestors; a house of chthonic denizens and familial ancestors; a place of psychological and metaphysical transformation; a source of material wealth and fertility; the birthplace of maize and humans; a chaotic wilderness inhabited by powerful and malevolent forces; an arena to supplicate the gods to remove illness and other daily ailments; and the path through which celestial bodies, such as the sun and the moon, passed (Stone 1995:32-44). Also of note, epigraphic evidence from the Late Classic suggests that many toponyms, including polity names, are derived from emic names of caves (Vogt and Stuart 2005:162). Many of the caves at Ucanha are associated with monumental construction (e.g., the Central Group and Str. 1) and would have served a ritual function albeit probably more intimately for elites. Yet this juxtaposition of pyramids and caves recreates the watery mountain (witz) of creation and would convey to the masses the esoteric ability of leaders to control and manipulate sacred geography. However, other vertical-shaft karst features that contained water, at least during the summer, are also present in close proximity to residential platforms (e.g, Str. 65 and Str. 242). While these wells surely served as a reliable water source, they also would have been used for other functions such as propitiating rain deities during times of aridity such as the Late Preclassic (e.g., Moyes et al. 2009). Additionally, some of the ancient wells at Ucanha were not located near architecture but rather in more open space. Since close proximity of resources to architectural compounds was a way for the inhabitants to lay claim on the resource (Lohse 2013; McAnany 1995; Webster 2005), it is possible the wells located in more open areas were accessible by a variety of households at Ucanha. Nevertheless, perennial access to water in a relatively dry and sporadically wet environment would have been another component of Ucanha that would have coaxed an agriculturally based population to settle here.

Finally, like caves, the large linear rejollada at the southern end of Ucanha had ecological and cosmological appeal. In a landscape of thin soils and high evapotranspiration rates, deeper, well-developed soils that retain moisture such as those in rejolladas were typically used for low-labor input intensive agriculture (Dunning 1999; Kepecs and Boucher 1996). Therefore, it is unsurprising that Munro-Stasiuk and colleagues (2014:167) also note a correlation between the “presence of rejolladas and the establishment of settlements” at other locations such as Ek Balam and Xuenkal. Soil investigations at Ucí produced isotopic evidence that rejolladas were indeed used for the cultivation of maize; however, the small size of these rejolladas would not have been able to sustain the population (Larsen 2012). Perhaps unsurprisingly, the rejolladas at Ucí are surrounded by the largest architectural groups at the site, suggesting these ecological resources were tightly controlled by elite groups. At Aguateca rejolladas associated with cacao growing were also directly controlled by elite families (Dunning et al. 1997). While steeper walled rejolladas, as seen around Chichen Itzá have been posited to be cacao groves, more gradually-sloping ones, like those present at Ucí and Ucanha, still retain moisture well and can grow a variety of crops including avocado (*Perseas americana*), mango (*Mangifera indica*), nance (*Byrsonima crassifolia*), caimito (*Chrysophyllum cainito*), and sapodilla (*Manilkara zapota*) (Munro-Stasiuk et al. 2014). Households around these rejolladas at Chichen Itza were also said to be controlled by elite groups (Kepecs and Boucher 1996). As will discussed in subsequent chapters (5 and 7), a residential platform near one of Ucanha's rejolladas was investigated to see whether or not elites controlled this ecological resource.

An increasingly drier period as seen from cenote, aguada, and lagoon sediment cores across the Northern Lowlands and a growing population (Curtis et al. 1996; Hodell et al. 2007)—both hallmarks of the Late Preclassic—surely would have afforded population concentration around a site of ecological promise. Given how both of these factors would have impacted farming practices and the desire to claim more arable land, Ringle and Andrews (1988:192) argue a broader sense of community and the sharing of resources helped fuel Preclassic Komchen's success: "Increasing security of agricultural production through the reduction of conflict and the sharing of resources would have meant increasing success of the community. In this fashion, continued residential stability may be considered a form of agricultural intensification". As mentioned at the start of the chapter, the presence of centralized rulership (possibly kingship) was also a component of channeling people to Ucanha during the Late Preclassic.

Evidence of Late Preclassic Governance: Popol Nah and Stucco Masks

One of the most striking architectural compounds on Ucanha's landscape is Str. 92, which is located roughly 80 m to the southeast of the Central Plaza (Figure 4.5). Str. 92 is an 80 m by 55 m by 2 m platform that supports two superstructures that stand roughly 5 m above the natural surface. Due to its size and form, it is likely during the Late Classic this structure was a palace that underwent a number of construction phases. Excavations led by Jacob Welch is 2014, however, uncovered a substructure (92c-SubIV) in Sub-Op. C (Figure 4.13) which consisted of a wall (roughly 75 cm tall and four courses high), preserved floor, and a portion of a doorjamb, all of which were covered in stucco. Ceramics from beneath the floor inside of 92c-SubIV entirely dated to the Late Preclassic, indicating a Late Preclassic construction date.

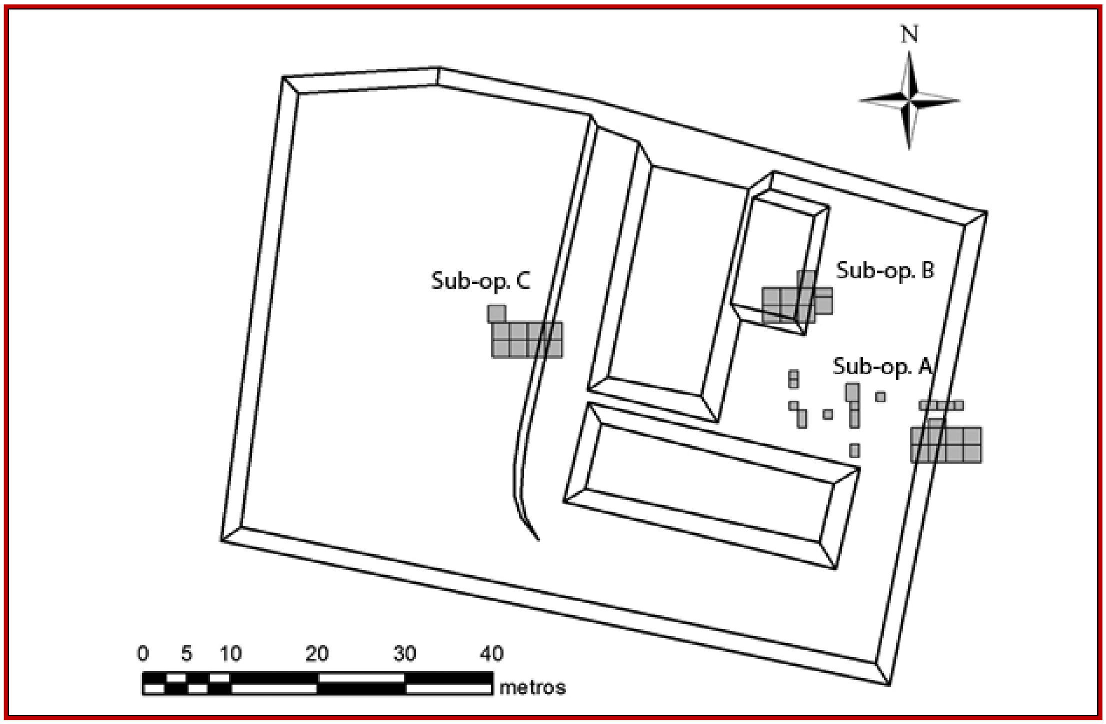

Figure 4.13: Map of Structure 92 at Ucanha with excavated areas shown in gray. Map courtesy of Jacob Welch.

Upon further investigation of this doorjamb, it was discovered the stucco walls were painted red with a motif the evokes the concept of a mat in Maya iconography (Figure 4.14 and 4.15). This cross-hatched motif has been interpreted as *pop (pohp)*, meaning mat, and has been directly associated with governance and political authority (Bey and Ciau 2014; Fash 1991). When these *pop* motifs cover architecture, they are said to be read (literally) as *popol nah* or "council house", implying some community-level political entity. While these structures are more common in the Late Classic—Palenque (Schele 1998), Acanceh (Miller 1991), Copan (Fash et al. 1992; Cheek 2003), Chichen Itza, Ek Balam (Ringle and Bey 2001), Kabah, Labna, and Kiuic (Bey and May Ciau 2014)—only one other from Uaxactun (Str. H-X) dates to the Late Preclassic (Freidel et al. 1993:143). Interestingly, Str. H-X depicts the *pop* motif in conjunction with two large masks that reference ancient deities of creation (Figure 4.16). While recent epigraphic studies have shown the mat sign is more often read as *jal*, a term associated with woven mat production, which has been found in elite palatial contexts (McAnany 2008; Robin 2004), Welch's excavations to date have not uncovered any tools associated with weaving such as bone needles or spindle whorls. Therefore, at this point evidence suggests this structure is the oldest popol nah in the Northern Lowlands, matched only in the Maya world at Uaxactun.

Figure 4.14: Photo of stucco wall with red painting associated with 92c-SubIV at Ucanha. Photo courtesy of Jacob Welch. Taken facing east.

Figure 4.15: Close-up photo stucco wall with red painting associated with 92c-SubIV at Ucanha. Photo courtesy of Jacob Welch. Taken facing east.

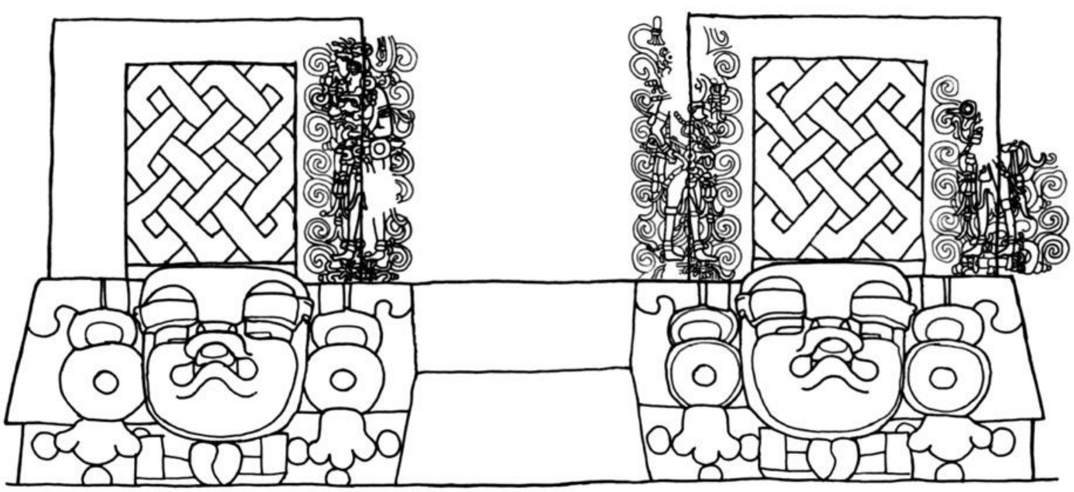

Figure 4.16: Drawing of Popol Nah entry at Structure H-X at Uaxactun by Linda Schele. Ancestors dance in vision clouds juxtaposed next to *pop* icons associated with rulership.

As has been argued elsewhere (Hutson et al. in press), it is likely 92c-SubIV was envisioned as a living entity on Ucanha's landscape. First, the redness evokes the concept of blood, which is where *chul'el* or the animating quality of life is housed. Second, the idea of wrapping a building with a woven motif indexes bundling, an act associated with animate beings. The idea of bundling is mentioned in the Popol Vuh wherein in creator gods bind the universe into existence with cords or ropes (Tedlock 1996:63-64); ancestors in the Maya area and across Mesoamerica were sometimes bundled (Guernsey and Reilly 2006; Reilly 2006); stela, which were a part of the distributed personhood of royalty and thereby considered alive (Houston et al. 2006; Houston and Stuart 1998), were bundled (Guernsey 2006; Stuart 1996); and the concept of tying (or bundling) a king with a crown marked his/her ascendancy to divinity (Freidel et al. 1993; Schele and Miller 1986; Stuart 1996).

Additionally, 92c-SubIV was buried by the early portion of the Early Classic, indicating a deactivation of this buildings power and presence on the landscape. Although speculative, it is interesting to note that during this period the main sites along the causeway are depopulated and/or experience a political and economic downturn, while Izamal becomes a regional power during this period. Nevertheless, this mat structure was an important part of Ucanha's social memory and a testament of communal pride. During the Late Classic, another apex in Ucanha's history, this building is disinterred and then buried once again, yet is done so with shocking precision as only parts of the stucco wall were exposed. Using material culture from the past to evoke previous grandeur is not uncommon in the Maya area or, more broadly, in Mesoamerica. Offering 4 from La Venta, which included 16 human figurines and six celts, was extracted with surgical accuracy hundreds of years after it was buried (Drucker et al. 1959). At sites like Tikal (Coe 1990) and Caracol (Chase and Chase 1996), later populations exposed ancient features as a means to situate present authority in past materializations of power. Clearly, 92c-SubIV was place that galvanized the community across time at Ucanha.

Recent excavations conducted by Welch also uncovered preserved stucco masks (92c-SubV) that flank a staircase near roughly 2.5m south (92c-SubIV) at Ucanha. While these stucco masks will be the subject of Welch's dissertation and images cannot be provided, their presence indexes new concepts of social differentiation and political authority during the Late Preclassic. Elsewhere, stucco masks depicting deities have been associated with the presence of institutional kingship. At sites like Cival (Estrada-Belli 2006), Kohunlich (Salazar Lama 2015), El Mirador, Uaxcatun, and Cerros (Freidel et al. 1993; Freidel 2005) Preclassic masked friezes arguably represent emergent dynasts depicted as deities bringing preciousness, as verdant agrarian icons of the sun or maize or other economic resources, to the populace. While direct evidence, such as tombs, of kingship has not been uncovered, Ucanha's landscape included a living popol nah and then, in a later construction phase, stucco masks produced by artistic specialists. These new material expressions would have surely integrated Ucanha's population, likely forging inter-elite networks and/or exhibiting the elevated QOL of the people associated with this stucco mask architecture. Clearly by the Terminal Preclassic elite factions were producing highly-skilled architectural elaborations by trained artisans, both of which attest to this household's social capabilities and material wealth. However, these stucco masks were also "terminated" by being interred during the Early Classic.

These features have a number of implications for centripetal forces that would have enticed settlement at Ucanha during the Late Preclassic, which, as a reminder, is the time during which great regional reconfigurations would have occurred as a result of physical integration via a long-distance sacbé. First, the presence of a popol nah indicates formal authority, possibly by council. During this period Ucanha is rapidly growing with a rather dense settlement pattern; extending authority beyond the site boundaries (Hutson et al. 2016); and erecting large construction projects that would have required coordinated labor. Therefore, it is reasonable for centralized decision making to emerge in order to mitigate conflicts and tensions amongst a newly aggregated population. A formal authority would have also made managing construction projects, such as pyramids and large plazas, run more efficiently. Additionally, the presence of stucco masks and the popol nah argues for the presence of one or possibly a family of rulers. As discussed in Chapter 2, Ucanha's site layout of roadways, plaza groups, and monumental architecture would have been an ideal landscape for ritual processions and pageantry, both of which are critical components of Houston and colleagues (Houston et al. 2003) of the "moral community". If indeed a ruler or group of leaders were able to claim and materialize their social position through masks and council houses, then it is likely an appeal to moral authority would have been enacted and reinforced through procession, theatrical displays, monuments-as-materializations-of-communal-pride, and the overseeing of socially acceptable levels of household quality of life.

Conclusion

As research continues in the Northern Plains, it becomes evident the Late Preclassic was an important period of changing demographic, sociopolitical, and economic and trends. The construction of the UCC shows not only was large-scale monumentality and the culmination of a process of social integration, it was also a physical entity that linked together sites that were seemingly vying for power during this period of broader change. According to mapping data, Ucí and Ucanha were likely micro-polities enticing followers to these sites, with Ucí ultimately emerging as the regional power along this intersite causeway. Nevertheless, the people of Ucanha built a substantial amount of monumental architecture, some of which intertwined with natural features in a way that likely created a landscape with cosmological significance that would have drawn more people to the site. Additionally, the presence of ecological features—such as caves, wells, and a *rejollada*—that provide important resources (water, deeper soils) would have also drawn people to Ucanha. Finally, excavations from Str. 92 uncovered a likely council house and large, stucco masks, both of which indicate centralized authority. Given the shifting sociopolitical landscape vis-à-vis population growth, physical integration at the regional scale, and coordinated labor investments into Ucanha's civic-ceremonial landscape, the presence of centralized authority would have served to mitigate conflict. These awesome materializations of power would have also served as a source of communal pride further demarcating Ucanha's grandeur in its battle for regional primacy with Ucí. In the next chapter, the chronology of Ucanha will be discussed along with trends of material culture distribution during the Late Preclassic and into the Early Classic.

CHAPTER 5: MONUMENTAL ARCHITECTURE, SACBÉ TERMINUS GROUPS, AND RESIDENCES: BUIDLING A CHRONOLOGICAL FRAMEWORK WITH EXTENSIVE TEST-PITTING

"Spatial segregation inhibits casual face-to-face interaction between social unequals and permits an upper-class monopoly on information. While inevitably involving more legwork, spatial dispersion can accomplish the same objectives. Residential dispersion discourages casual or accidental interaction of any kind within the context of the home. At the same time, social equals can easily identify each other through the quality and design of their domestic architecture and deal with each other on an intentional basis. Indeed, spatial dispersion of residence has a certain advantage over spatial segregation. If the social elite is embedded in dispersed communities, the illusion of egalitarian organization may be perpetrated and the sociopolitical identification of inferiors as a class discouraged." David Freidel (1981:375-376)

Introduction

This chapter presents the results of an extensive test-pitting program at Ucanha as a way of building a chronological framework for additional excavations and analyses presented in later chapters. Since the overall goal of this dissertation is to chronicle how the inhabitants of Ucanha negotiated quality of life at the household level and whether or not larger-scale practices reinforced a sense of community, it is critical to excavate around a sample of residential platforms as well as in contexts that would be integrative features, such as larger plazas and causeway terminus groups. Thus, the timing of the process of microregional integration as materialized by the 18 km long causeway form Ucí to Cansahcab is important. This roadway is monumental in scale, would have required the labor of hundreds if not thousands of individuals perhaps through work parties—a common practice in Mesoamerica that forged the idea of a collective community (Wells 2007)—and, likely would have functioned as a marker of communal pride and/or a geopolitical boundary (Hutson 2012; Kurjack and Andrews 1976). Sparse test excavations at Ucí, Kancab, and Ucanha done by Ruben Maldonado Cardenas (1979, 1995) in 1979 and the early 1980s led him to believe that during the Late Preclassic

Ucanha would have been rather autonomous yet by the Early Classic Ucí became the dominant local hegemonic center. According to Maldonado, Ucanha and Cansahcab were connected by a roadway and latter, once Ucí had power, Ucanha was connected to Kancab. As mentioned previously the long-distance causeway was constructed in three segments (Hutson, Kidder, et al. 2016); however, prior to UCRIP, the lack of a robust sample size of ceramics to date Ucanha hindered the ability to discuss the timing of integration and how this process influenced, and was influenced by, the inhabitants of Ucanha.

In the summers of 2013 and 2014 the UCRIP members Daniel Vallejo-Caliz, Scott Hutson, Celine Lamb, Isabelle Muniz-Martinez, Aurora Muriente Pastrana, Jacob Welch, and myself implemented an extensive test pitting program at Ucanha. The objective of this investigation was to gather information from a variety of structures—some located near the site core, some further away; some with megalithic stones, some without; some with relatively high construction volumes, some with lower in order to get artifactual evidence from a variety of residential contexts. From survey data, residential platforms were chosen for test pitting using a stratified random sample according to three distance categories from the site center (<300 m [n = 5], 301 – 600 m [n = 6], and >600 [n = 5]). Because platform energetics also functions as a proxy for labor investment and household wealth, platforms above the 100 sq meter natural break—see previous chapter—were also taken into consideration when choosing areas for test pitting. Architectural features smaller than 100 sq meter yielded no pottery from preliminary test-pitting in 2010, so this size class was omitted from test-pitting samples thereafter. Monumental contexts, such as pyramids, sacbé terminus groups, the Central Group, and the intersite sacbé, were also tested in order to understand how monumental construction efforts coincided with the process of integration. Based primarily on ceramic evidence I could then piece together occupation histories for the site, a critical component for understanding how the process of integration occurred at Ucanha.

Building from an intensive, full-coverage survey in which we mapped 394 architectural compounds, we chose 28 groups for test pitting, giving us a 7.11% sample of compounds at the site. Additionally, since some areas had no vegetative covering because of land clearing, we collected ceramics from the surface of 12 architectural compounds, giving us a total sample size of 40 compounds or 10.2% of the 394. The test pits revealed some insights into the occupation history, ritual practices, and variations of wealth at Ucanha. Four of these compounds—the Central Group/Op. 3, Str. 65/Op.11, Str. 132/Op.13, and Str. 239/Op.19) and were further explored with more intensive excavations, including horizontal exposures in conjunction with chemical analyses of soils or plaster flooring. The results of the intensive excavations in these four contexts are presented in chapters 6 and 7. Finally, it should be noted that one additional large compound identified as a palace (Str. 92/Op. 17) also received extensive excavations and is the subject of Jacob Welch's dissertation.

Excavations were conducted by workmen from the nearby town of Cansahcab using trowels and *picoletas* (miniature pick axes wielded with one arm). All soil was sieved through ¼ inch mesh screens and all macroartifacts were collected in bags according to provenience and type of artifact. Typical artifacts included ceramics, lithics (e.g. chert and obsidian), shell, bone, charcoal, and groundstone. Other "special finds", such as greenstone beads, complete (or mostly complete) vessels, projectile points, etc. were also bagged separately.

Notational Procedures

Proveniences were recorded according to the following spatial hierarchy: Operation, Sub-operation, Unit, and Level. Operations are numbered and refer to all excavations or other methods of data collection at a particular architectural compound or other distinct space. Sub-operations are a further spatial division within the operation which typically refer to a number of excavation units located in a similar area, to achieve a similar goal, or to explore a specific feature (e.g., two test pits on the north of a residential platform, all of the shovel tests spread across the main plaza, or unit associated with a burial). Sub-operations are listed alphabetically (A-Z). The unit is a number referring to a specific quadrilateral excavation area (i.e., 1 m x 1m, 2 m x 1 m, or 2 m x 2 m). For test units the unit number is written sequentially; however, with more broad-scale horizontal exposures the units were sometimes recorded with an x,y coordinates tied into Cartesian space on the grid for the operation. Finally, the level gives the finest-grain amount of spatial control within a unit and is changed either by natural stratigraphy, arbitrary depth, or to partition off an area of interesting (e.g., inside/outside a wall, within a concentration of artifacts or soil coloration, etc.). Collectively, a typical provenience would be written as 18B1-3, meaning Operation 18, Sub-operation B, unit 1, and level 3.

Ceramic Methods and Type-Variety

Before getting into the ceramic chronology of test-pitting operations at Ucanha, a discussion of ceramic methods is needed. With the help of project ceramicist Shannon Plank and Northern Lowlands ceramic specialist Iliana Ancona Aragón from the

Universidad Autónoma de Yucatán (UADY), all ceramics were classified according to the Type:Variety (T:V) system. The T:V system hierarchically classifies ceramics into Groups, Types, and Varieties based on macroscopic observations such as slip color, paste, surface finish, decoration, and form (cite). The T:V system has a deep tradition in the Maya world with many of the earliest systematic ceramic chronologies being established with this system using ceramics from contexts with stratigraphic control. The T:V system affords projects across the Maya world to have a common basis for communicating spatio-temporal continuities and changes across a wide geography. While the T:V system is an etic typology that can overlook technological and morphological nuances which are critical for finer chronological resolution (Culbert and Rands 2007; Rice and Forsyth 2004), it provides a well-established chronological framework for dating the history of Ucanha in a quick, efficient manner. Furthermore, with the near absence of radiocarbon samples found in discrete contexts from residential platforms, the T:V system provides a relative chronology though many types have been dated to absolute spans of years through associated radiocarbon samples at other Maya sites. Unfortunately, some groups, such as Saban and Xanaba, have a rather coarse chronological resolution, likely because of the homogenizing nature of the T:V system. Therefore, attribute analysis of diagnostic sherds was also completed in order to look at technological, morphological, and stylistic nuances that can provide finer chronological resolution (see Chapter 7 for a discussion about attribute analysis methods).

In addition to group, type, and variety being assigned for each sherd, vessel form was also noted when preservation allowed. In the Maya area the five primary categories of vessel form are restricted bowls (*cuenco*), unrestricted bowls/dishes (*cajete*), jars (*olla*), *tecomates*, and vases (*vaso*) (LeCount 2001:945; Rice 2005:216). *Cazuelas*—larger serving basins whose height is greater than or equal to its diameter often with handles or heavily bolstered rims—are also noted for some Maya ceramic varieties. Since vessel form and function are typically related (Hendon 2003; Rice 2005; Sinopoli 1991), it is important to note form since higher proportions of service to culinary vessels typically indicate wealth differences between households (Fry 2003; Hirth 1993; Smyth et al. 1995; Welch and Scary 1995). In keeping with UCRIP conventions, body sherds were usually sorted as either olla or cajete, which is an over-simplification since a "cajete" body sherd could have come from a bowl; therefore, this classification is better envisioned as a restricted versus unrestricted vessel. Cross-culturally service wares tend to be aesthetically pleasing with painted decorations and/or other surface treatments (e.g., incising, punctations, excising, stuccoed, etc.) and made in the forms of plates, bowls, dishes, and vases (Clark and Blake 1994; LeCount 1999; Junker 2001; Welch and Scarry 1995). Since larger vessels are also associated with the ability to mobilize food for beyond the immediate household (Blitz 1993; Cook and Glowacki 2003; Wells 2007), which is a marker of higher household quality of life, rim diameter and orifice diameter of unrestricted vessels were measured.

In order to better understand the timing of physical integration and the chronology of Ucanha's monumental areas, eight areas were test-pitted (Figure 5.1).

Test-pitting Monumental Contexts

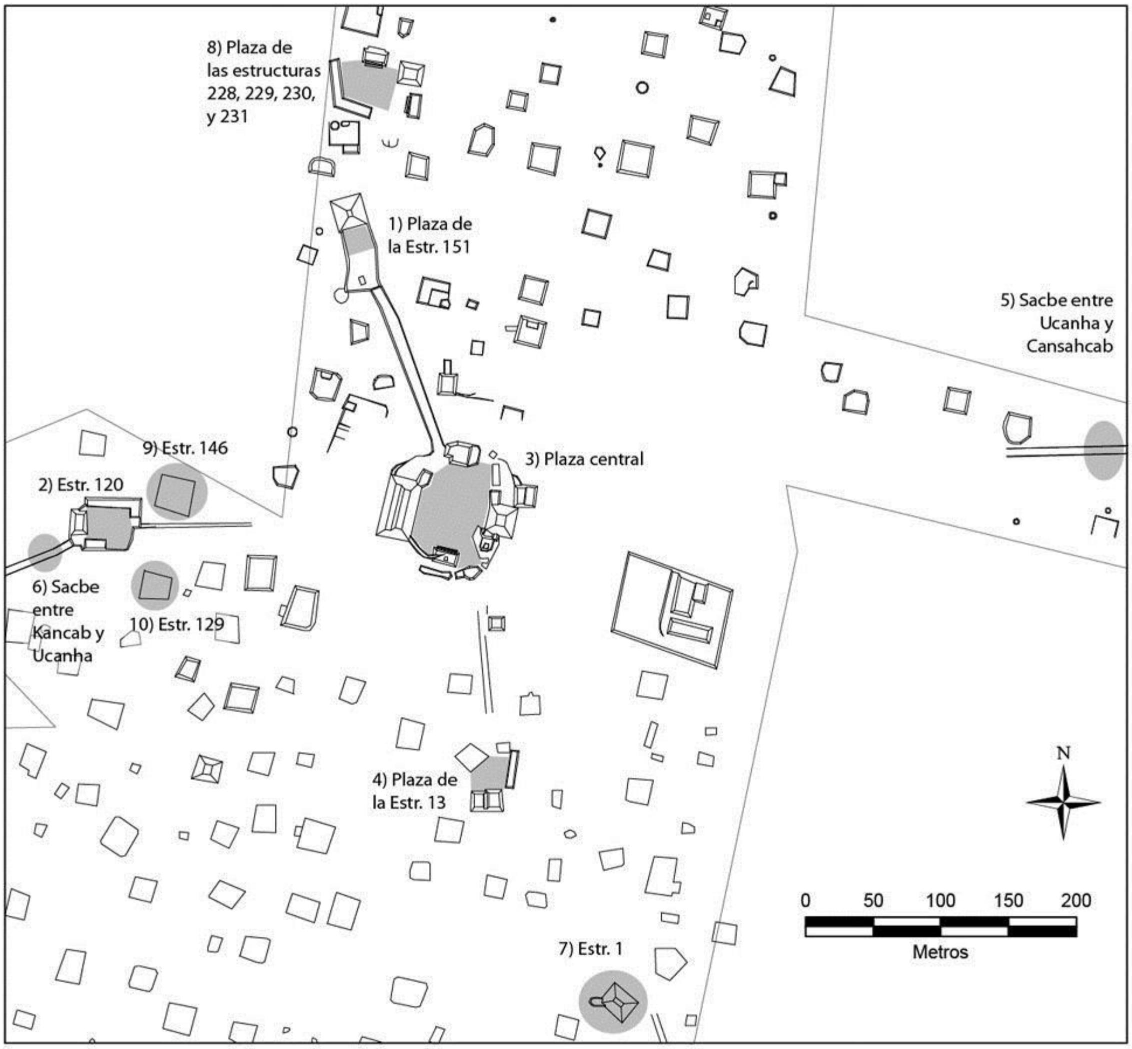

Figure 5.1. Map of Ucanha with monumental areas and parts of causeways that were excavated shown in grey. Map courtesy of Scott Huston.

Dating the Ucí-Cansahcab Causeway

Refining chronological resolution for dating the UCC is critical for understanding the timing of integration. As mentioned previously, there is considerable variation in the construction of the UCC: for example, GPS points taken every 100m between Ucí and Kancab show orientation oscillates between 66 and 76 degrees. Dimensions range from 4 to 8 m wide and 0.2 to 1.1 m tall. Retaining stones are usually 50 to 80 cm long but can be over 1 m long. Some areas are devoid of retaining stones completely, though some retaining stones might have been scavenged and reused in new contexts (Hutson 2014:248). In other areas of the Maya world, this variation in construction patterns has been inferred to be indicative of different labor groups working without strict supervision (Lucero 2007). At Ucanha the UCC running west toward Kancab connects with Str. 120. While the UCC running east toward Cansahcab does not appear to connect to any architectural compound, the area where the causeway on the east side of the Ucanha site core begins, has been heavily disturbed by the creation of a modern hacienda. Overall, seven trenches across the UCC (Figure 5.2) yielded 54 identifiable sherds, with the majority (59.26%) dating to the end of the Middle Preclassic or beginning of the Late Preclassic, although none of these samples were from sealed contexts.

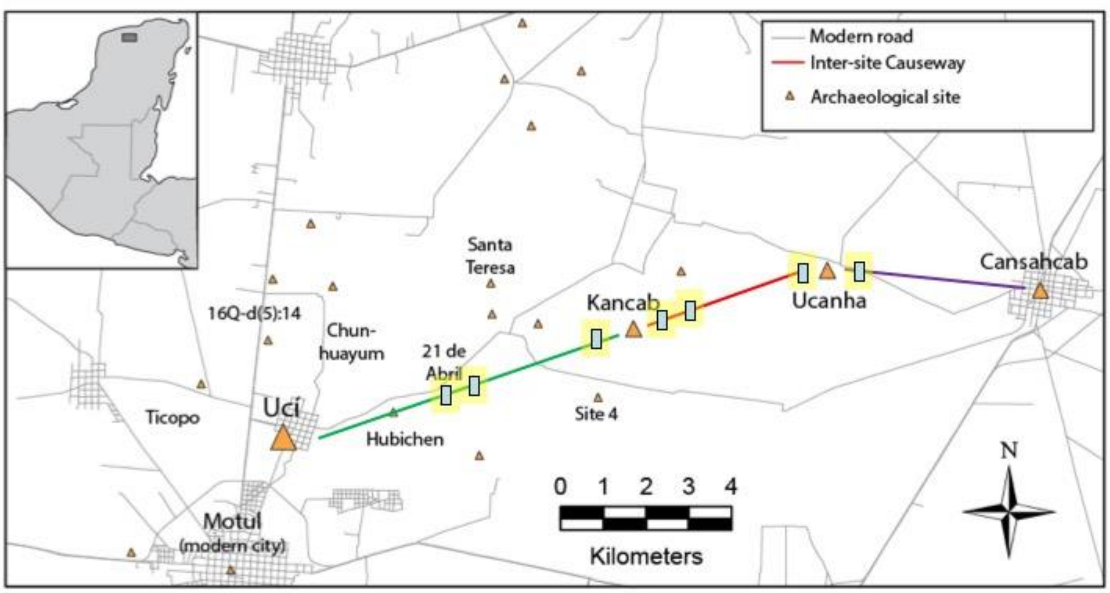

Figure 5.2. Map of UCC showing trenches across the causeway. Map courtesy of Scott Hutson.

Although few ceramics have been recovered from excavations of the UCC, a trench from a hinterland context between Ucí and Kancab yielded diagnostic ceramics (i.e., Joventud, Chunhinta, Xanaba, and Saban) that dated to the early parts of the Late Preclassic (Hutson 2014:249). Similarly, of the nine identifiable ceramics recovered from where the causeway running from Ucí connects with Str. 66n1 at Kancab, 7 date to the late Middle Preclassic/early Late Preclassic, including two different types of both Joventud and Dzudzuquil, and one sherd dates to the Late Preclassic (Sierra Red)—the other two sherds were from the Postclassic. These trenches, therefore, suggest this section of the causeway was built sometime around the beginning of the Late Preclassic. Interestingly, comparative ceramic assemblages associated with the construction of the Izamal-Aké causeway indicate a Protoclassic date, thereby making the UCC an older feature on the regional landscape and physically integrating people earlier (Plank et al. 2018). To expand in our data set of causeway excavations, UCRIP project members placed trenches across the causeway at the Kancab-Ucanha segment and at the Ucanha-Cansahcab segments of the causeway, both within the bounds of the Ucanha site.

Operation 5: Trench across Ucanha-Cansahcab Sacbé

The first sacbé trench (Operation 5) consisted of four contiguous 1 x 2 m units that ran perpendicular to the portion of the intersite causeway heading east towards Cansahcab (Figure 5.3). The trench was oriented roughly north-south. The sacbé, roughly 6 m in width, was clearly identifiable by its rise and line of megalithic-sized stones that demarcated the southern boundary (Figure 5.4). Unlike the portion of the scabe exposed by the Operation 6 trench (see below), there was no clear line of stones that formed the northern boundary of the sacbé. However, an historic or modern albarrada was located nearby, so it is possible the stones that comprised the northern boundary were re-used to make the albarrada.

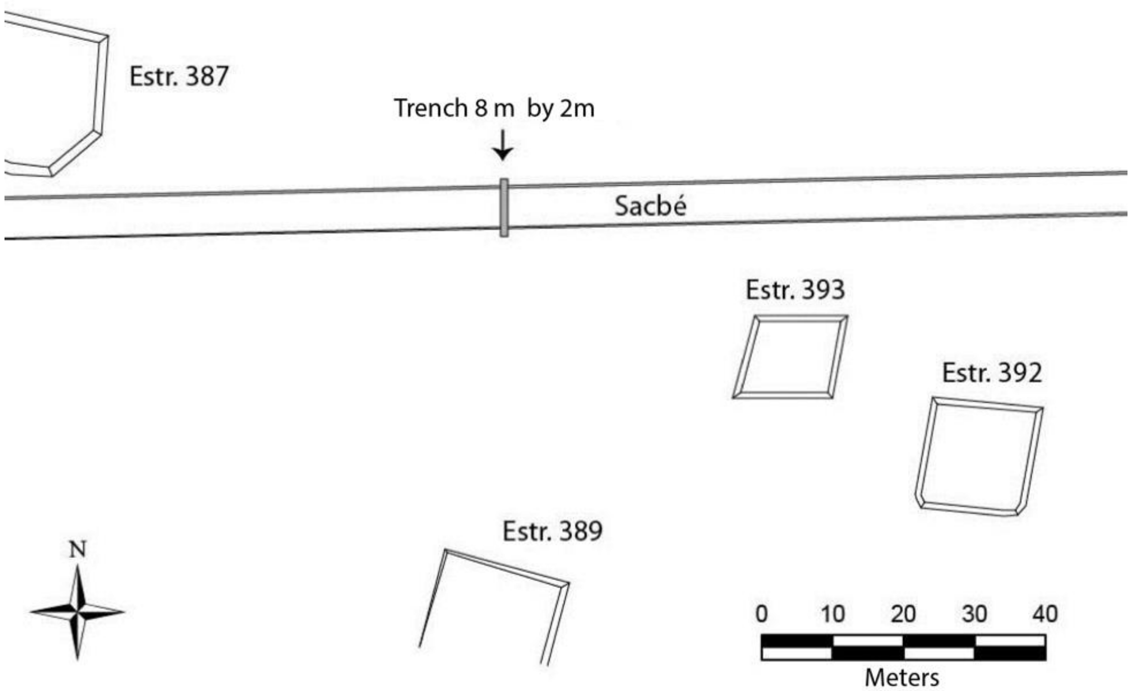

Figure 5.3. Map of trench across portion of intersite causeway heading towards Cansahcab.

The units were numbered in ascending order moving south to north and parts of the trench that extended beyond the boundary of the sacbé were excavated as separate lots. In all units, a layer of black organic soil (5 YR 2.5/2) was present. Moving from south to north, this layer decreased in thickness from 30 cm to 10 cm. Small gravels and chi'ich were present and small thin roots were ubiquitous. The soil was a sandy loam with a granular texture. Beneath this level was a dark brown layer (7.5 YR 2.5/2) with a similar texture. However, in this level we also see the increase of chi'ich, especially towards the middle of the sacbé. Moving down further we see the presence of medium size cobbles and finally large tabular stones placed flush against the bedrock in order to level the area for sacbé construction, yet soil was still present. Moving south from the northern boundary towards the middle of the sacbé, we encountered larger rocks, probably as a result of the natural bedrock dipping down in this area. A similar trend was also noted just north of the southern boundary of the sacbé. Thus, in many ways, sacbé construction is similar to that of a platform albeit in an extended form (Shaw 2008).

Figure 5.4. Picture of the profile of the intersite sacbé with some retaining stones in foreground. Picture taken facing north.

Unfortunately, only three pieces of ceramics were recovered from this operation. Of these three, one was too eroded for identification and two dated to the Late Preclassic (Sabán sin engobe). The two identifiable sherds were found within the dark organic soil of the first lot of Unit 2. Additionally, a small piece of shell weighing only 1 g was recovered from the humic layer in Unit 1 near the southern boundary of the sacbé. While the identifiable ceramics do suggest a construction date of the Late Preclassic, it is difficult to make an interpretation with such a small sample size.

Operation 6: Trench across Kancab-Ucanha Sacbé

The second trench (Operation 6), was placed to the west of Str. 120 and consisted of four contiguous 2 x 1.5 m units that were placed perpendicularly across the sacbé coming from Kancab. Here the causeway measures 5.6 m wide and has an orientation of 67 degrees. In this part, both the northern and southern retaining walls were constructed using megalithic stones with better preservation in the north than in the south (Figure 5.5 and Figure 5.6).

Figure 5.5. Photo of megalithic stones on the north side of Sacbé 1 (facing south) about 10 m to the est of Str. 120 at Ucanha.

Figure 5.6: Photo of sacbé trench showing megalithic stones in foreground and background (facing south).

In general, all of the units terminated after only one lot because bedrock was reached rather quickly (between 25-45 cmbsd depending on the undulation of the bedrock) (Figure 5.7) and a few ceramic artifacts were recovered. Additionally, the presence of many small roots and rocks of various size associated with sacbé fill was noted in all units. However, larger, immovable rocks appeared in higher frequency in in the middle portion of the causeway, no doubt from efforts made to level the area.

Only six pieces of ceramic were recovered from this sacbé trench. Of these, four date to the Late Classic (Muna pizarra, Chuburna café, and Teabo rojo). The other two sherds date to the Preclassic: one was an unidentifiable Preclassic sherd and the other was a Joventud rojo that dated to the Middle/Late Preclassic. Unfortunately, the limited number of ceramics recovered do little to clarify the timing of the intersite sacbé construction. Given that evidence from elsewhere along the intersite causeway place sacbé construction occurring by at least the 4th century CE, it is likely the Late Classic sherds represent secondary or tertiary deposits not associated with sacbé construction but later occupation.

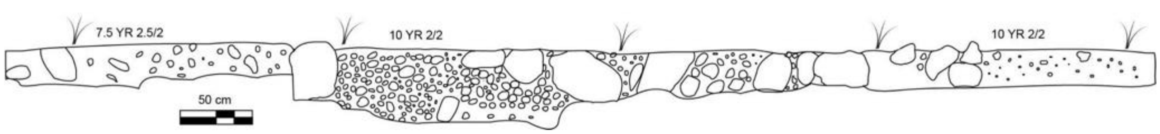

Figure 5.7. Profile of Sacbé 1 near Str. 120 showing larger retaining stones and small cobbles that form core of the causeway.

Sacbé Terminus Groups

As discussed in Chapter 4, three of the directional sacbeob have terminus groups with associated plazas. These architectural features would have facilitated processions as well as gatherings thereby animating the community and creating a moment of cohesion through communitas.

Operation 1: North Group (Northern Pyramid [Str 151] and Raised Plaza [Str. 150])

This operation consisted of a single 2 x 2 m unit placed on the centerline south of an approximately 10m tall pyramid (Str. 151), which is connected to the Central Group by an intrasite causeway (Figure 5.8). Measuring 24 m by 22.6 m at the base with a volume of roughly 5,424 cu meters, it is the largest pyramid at Ucanha; it is also associated with a raised plaza to the south with an area of 1,119 sq meters.

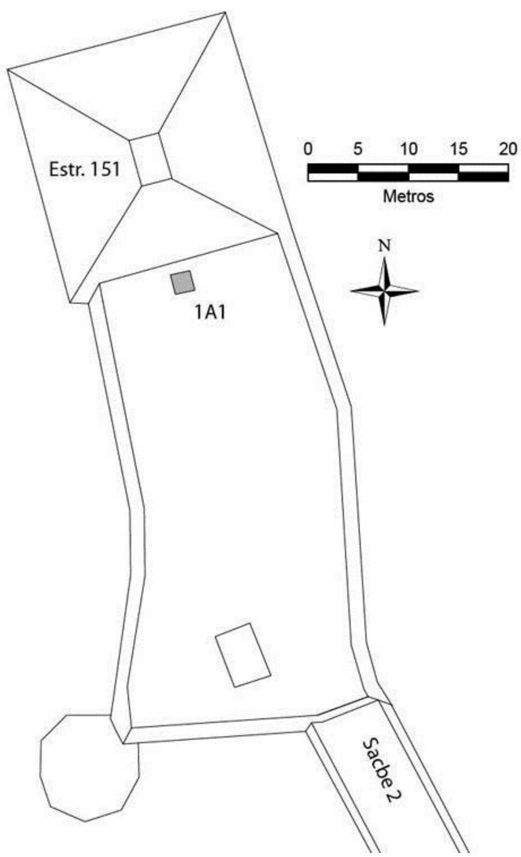

Figure 5.8. Map of Op. 1 / Str. 151

This unit, like those placed along the centerline of the pyramids in the central plaza, had a series of tightly superimposed floors atop a layer of fill. In total five superimposed floors were found on top of a dry-core fill sequence. In the southeastern part of the unit, a portion of a sixth floor was found flush with the bottom of the dry-core fill sequence. The deepest part of the unit in which the dry-core fill could be removed (i.e., the eastern half) went down between 116 and 171 cm below surface depth (cmbsd).

The first two lots consisted of the soil above the first series of floors. The first lot consisted of a roughly 10 cm black humic layer (10 YR 2/1) sandy loam followed by 15 cm thick dark brown layer (10 YR 2/2). Parts of a stucco floor were noticed in the northeastern corner about 15 cmbds, and near the end of lot 1 at roughly a depth of 25 cmbsd and 80 cm south and 80 cm west of the northeastern corner, a small jade bead was recovered (one of only a handful found at Ucanha). While the first floor was difficult to find in the unit, floors two and three are clearly present at the termination of lot 2 and cover the entire unit. Each of the floors was 2-3 cm in thickness. Of the 74 identifiable sherds recovered from above these three floors, 37 date to the Late Preclassic and 28 date to the Late Classic; 5 polychrome Tituc sherds from the Early Classic were also found as well as one sherd of Dzudzuquil.

Lot 3 consisted of breaking through the next two floors (Floors 4 and 5) and removing sascab and large flat rocks of the dry-core fill that were place on top of vertical stones. Under the floors, the soil changed to a pale brown (10 YR 7/3) loam. The end of the series of floors and start of the dry-core fill was between 60 cm below datum in the north and 45 cm below datum in the south. Rocks removed measured between 5 and 40 cm in length.

Lots 4 and 5 consisted of a thick horizon of dry-core fill. Some of the rocks removed were vertically placed so that they form inverted u-shaped construction pens, which is similar to the construction technique seen under the floors found in front of Str. 147 in the Central Group (3A1) and likely indicate a similar time of construction. In lots 4 and 5 some sediment was present, and it was classified as a light brown (10 YR 7/3) sandy loam. While digging down in lot 5, a sixth, poorly-preserved floor was noticed in the southeastern corner of the unit. Since this floor was not immediately discovered, some parts of lot 5 went beneath floor six. Only a small sliver of the sixth floor remained. In lot 5 we also found two faunal bones weighing only 5 g. We also collected two pieces of charcoal for possible AMS dating. At this point, lot 5 was terminated and leveled of at floor 6, which was found at 120 cmbsd.

Lot 6 consisted of a reddish-brown sediment (10 YR 3/6) known locally as kancab and was classified as a sandy loam. In the west of the unit many large rocks were left in place because moving them would cause possible injury and/or they were immovable. This lot and unit terminated with berock. The eastern part of the unit went down about 165 cmbsd but the western part only went down about 50 cmbsd because of these large immovable rocks.

Below the initial series of superimposed floors, lots 3 – 6 yielded 59 identifiable sherds. Of these all but two sherds dated the to the Late Preclassic, including Xanaba, Chancenote, and Unto. Moreover, six sherds of Xanaba Caucel Chorreado sobre rojo were present indicating this raised platform was constructed during the Terminal Preclassic. Furthermore, the fact that Str. 150a—a rectangular foundation that functioned as a raised platform that connected Str. 151 with Sacbé 2—was built in the megalithic style strengthens a Terminal Preclassic time of construction. Of final note, a Joventud spout was also found in lot 5 in association with faunal remains. Spouted vessels are commonly associated with ritual chocolate consumption (Powis et al. 2002) and have been known to be heirlooms; therefore, it is possible this context contains material residue of feasting in front of a monumental stage.

Operation 2: Western Group and Str. 120

This Western Group consists of a raised platform (Str. 120) which supports structures (120a, 120b, 120c, and 120d) on all sides (Figure 5.9). It is linked to Sacbé 5, which runs eastwards from this group toward the Central Group, located roughly 250 m away. Sacbé 5, which has a width of 3 m and lacks megalithic stones, runs for 80 m and then disappears. The raised platform, which in conjunction with the aforementioned structures forms a small plaza, measures approximately 52 x 40 m, sits 1.2 m above the natural surface, and covers 1842 m^2. The focal point of the plaza is Str. 120d which measures 19 m by 12.5 m and sits 2.5 m above the surface of the raised plaza; it also contains a megalithic staircase facing the plaza, similar to that of Str. 1 at Ucí albeit of lesser quality. Str. 120a, located on the north of the plaza has three circular megalithic columns, which are the only ones found at Ucanha, and megalithic stones that form its base (Figure 5.10). Megalithic columns, which functioned as supports for a perishable roof, are also found at Str. 1 at Aké. This plazuela group is morphologically different than any other group at Ucanha and was likely a staging area or destination for processions, since it connects two causeways and channels bodies into the western part of the quadripartite layout of the site.

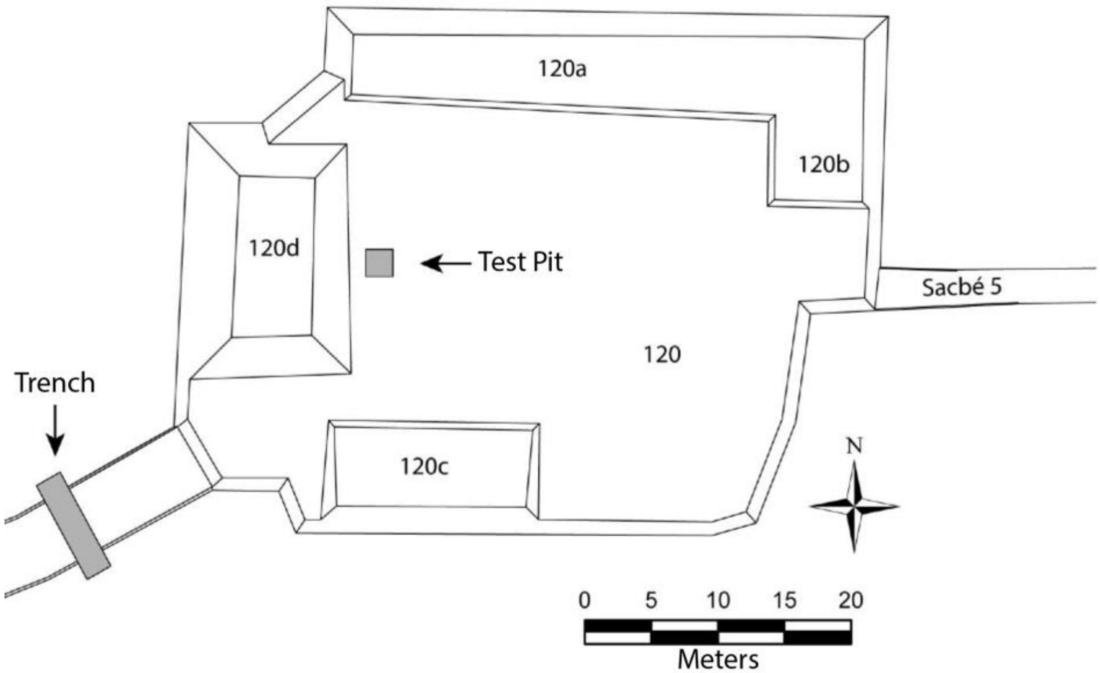

Figure 5.9. Map of Op. 2 with associated structures, causeways, and test pit location labeled.

Figure 5.10. Photo of Str. 120a showing megalithic base as well as megalithic column next to Mariano Chan. Taken facing west.

This operation consisted of one 2 x 2 m unit placed at the middle of the eastern side of Str. 120d. Since a series of variously preserved floors were encountered, this unit was dug in four lots to better control for floor/no floor contexts. Lot 1 consisted of the area above the series of floors. The soil was a dark-brown (10 YR 2/2) loam with a concentration of rocks from 5 – 15 cmbsd. In this lot, two large, nicely-hewn megalithic stones jutting out roughly 10 cm from the west wall of the pit were uncovered around 25 cmbsd and form one course of a staircase (Figure 5.11). Fragments of 3 cm thick floor were found in the screen and an in situ floor was found in the northeastern corner of the unit. The first lot leveled out here in order to follow the floor, so it was terminated at roughly 40 cmbsd in the east and 55 cmbsd in the west.

Figure 5.11. Profile showing two megalithic stones that form first course of staircase of Str. 120d. Picture taken facing west.

Lots 2 and 3 consisted of the area without and with floor, respectively, at the same depth. Both lots consisted of a similar dark-brown (10 YR 2/2) loam that was present in the first lot. In lot 2 there was lots of chi'ich fill (5 -7 cm in diameter). The floors at this operation ranged from 5 cm thick and very tough to roughly 2 cm thick and rather crumbly. This discrepancy between the forms of these superimposed floors at this operation suggests different construction groups laid down each of the floors (Figure 5.12). Given that these floors were placed directly on top one another, it is possible the construction occurred over a relatively short time period. None of the floors were preserved enough to completely "seal" the unit; therefore, it is likely contexts were mixed as a result of bioturbation as evidence by the large number of roots running through the unit.

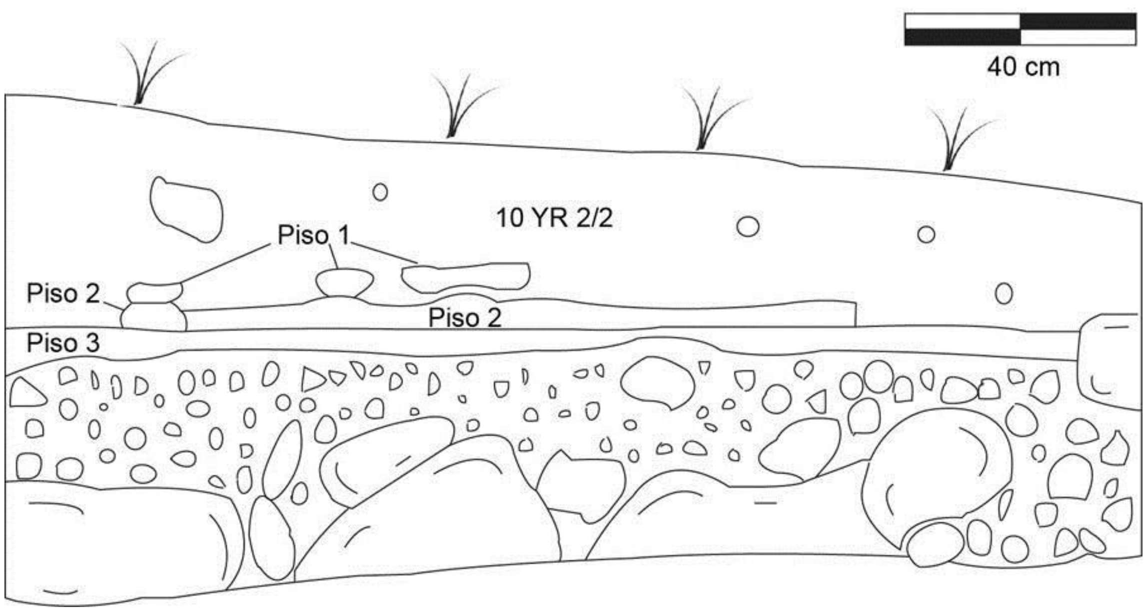

Figure 5.12. Eastern profile of Op.2A showing sequence of floors and fill below them.

Finally, lot 4 consisted of many large rocks inclusions—likely fill used to level the area for floor construction—with a dark brown (10 YR 2/2) sandy loam present around the rocky fill. This lot terminated with bedrock between roughly 100 cmbsd and 65 cmbsd—this large discrepancy is the result of the slope of the surface of bedrock, which was deeper moving away from Str. 120 towards the southeast of the unit.

The results from ceramic analysis do little to clarify discrete occupational chronologies. For example, ceramics recovered from Lot 1 include types from the Middle Preclassic (Chunhinta, Dzudzuquil, and Joventud), the Terminal Preclassic (Sabán [Chancenote estriado] and Xanaba), the Early Classic (an eroded polychrome sherd), the Late Classic (Ich Canziho, Teabo, and Muna), and the Postclassic (Navula). Of note from the ceramics recovered from lot 1 was a single Yalcox negro sherd that was through to originate from the Usmancinta area of the Petén. This sherd was the only example of this variety found on the project thus far and attests to the presence of external networks of political interaction albeit through down-the-line trading (Renfrew 1975). While lots 2 and 3 were comprised of only Preclassic sherds—all of the aforementioned types—lot 4 also had Early Classic sherds (Oxil and possible Huachinango) and one Late Classic sherd (possible Chuburna). In total 61 sherds were recovered and of these 17 were too eroded for identification. The 44 dated sherds were assigned as follows: 15 Middle/Late Preclassic (34.1%), 7 Terminal Preclassic/Protoclassic (15.9%), 4 Early Classic (9%), 16 Late Classic (36.36%), and 2 Postclassic (4.5%). Since the majority of Preclassic sherds were from a fill context it is difficult whether or not to say if their presence indicates a Preclassic occupation. The thin soils coupled with the bioturbation from roots leaves interpretations tentative. Given the sacbé from Kancab terminates near this plaza, the structure included megalithic architecture, and the intrasite sacbé connects this area with the central plaza, it is likely this monumental area was around the same time as the intersite sacbé.

Operation 4: Dual Raised Superstructures (Str. 13, 13a, and 13b)

This architectural compound consists of Structure 13—a rectangular, megalithic platform standing 1.5 high with a volume of 559.5 cubic meters—that supports two superstructures (Str. 13a and Str. 13b) that stand an additional 1 m high and have a volume of 95 cubic meters and 115 cubic meters, respectively. This group also has a long, range structure to the east (Str. 64) and two other structures to the north that were damaged by a modern road. Collectively, these structures form a small plaza with an area of approximately 600 m^2. To the south of the Central Group there is a poorly preserved intrasite sacbé that, if extended 75 meters more to the south, would connect this architectural group with the main plaza (see figure 5.13). Two 1 x 1 m test pits (4A2 and 4A3) and one 1 x 2 m test pit (4A1) were placed around this group. Figure 5.14 shows their locations.

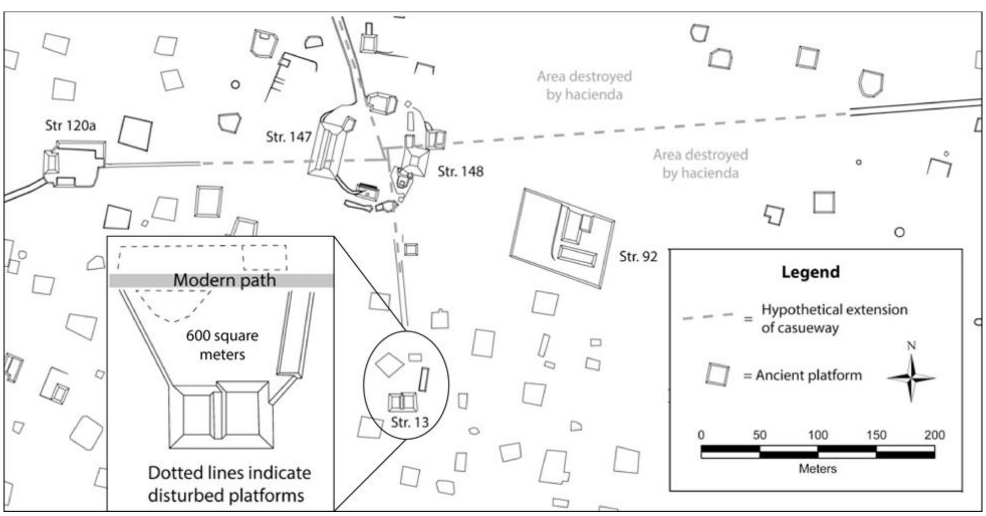

Figure 5.13. Map of Ucanha showing Op. 4 in relation to Central Group. Op. 4 is magnified in box to the left.

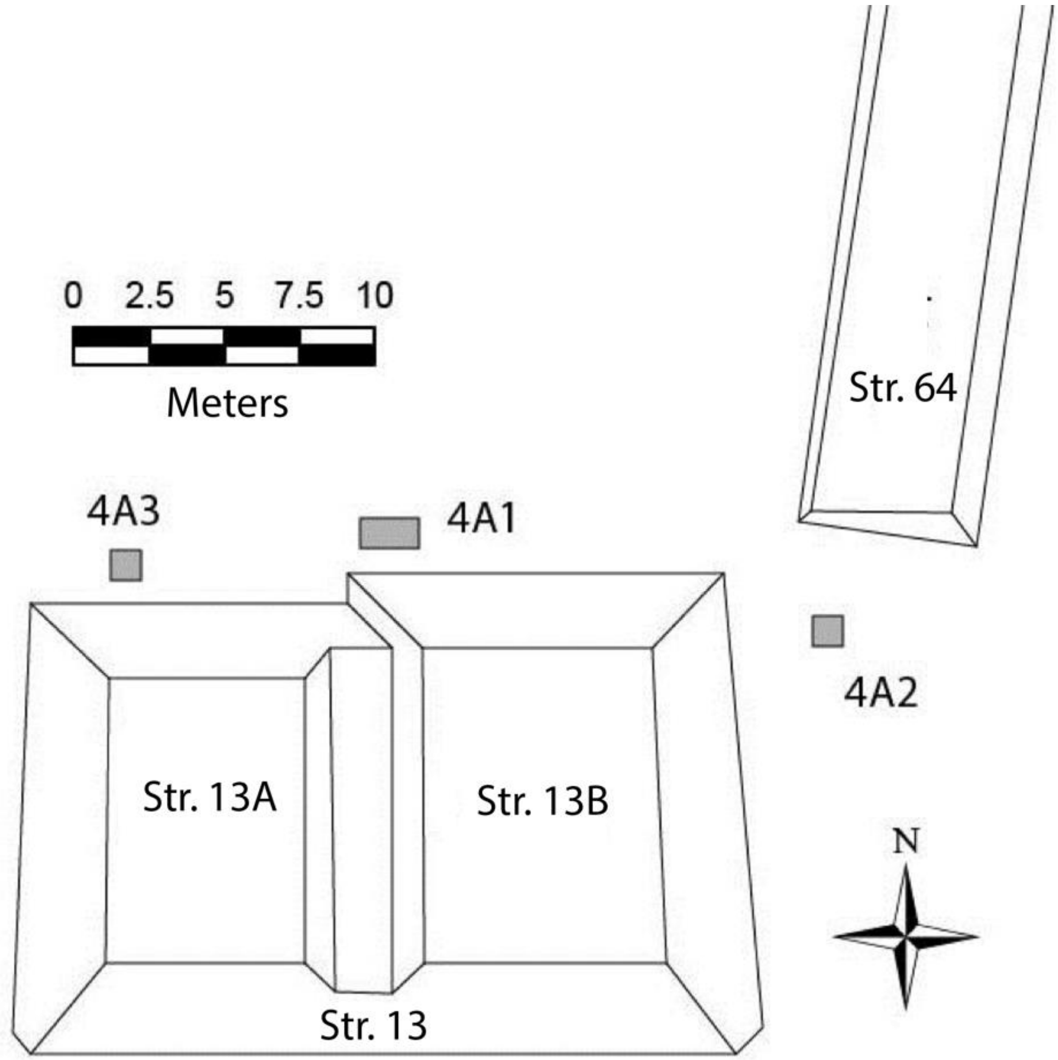

Figure 5.14. Map of Op. 4 with structures and test pits shown.

Unit 4A1 was a 1 x 2 m unit placed flush on the centerline of the megalithic platform (Str. 13). This unit consisted of three lots and terminated with bedrock at 50 cmbsd. The first lot consisted of an organic-rich, very dark brown (10 YR 2/2), sandy loam. While excavating this lot at a 20 cm arbitrary level, a poorly preserved floor (Floor 1) was encountered in the northwest portion of the unit. Floor 1 was hard and durable yet thin; however, bioturbation from the many nearby trees likely contributed to its poor preservation. Since the floor was only preserved in a small portion of the unit, it was difficult to separate sealed from unsealed contexts, so the entire 1 x 2 m unit was taken down another arbitrary 20 cm. In lot 2 while excavating down at 20 cm arbitrary depth, we encountered another better-preserved floor (Floor 2) immediately under the first floor. While the coloration of this level was the same as the previous, there is a texture change to a finer silty loam and the number of rocky inclusions decreases. Lot 3 consisted of busting through the second floor and terminated with bedrock. Under the floor was a layer of *sascab* on top of a layer of dirt. This layer of dirt is also a very dark brown (10 YR 2/2) and probably represents a paleosol that was placed here in order to level off the area. As in A.3 there was no dry-core fill and only dirt, *chi'ich*, and *sascab* used to prepare the area for floor construction.

Ceramics from below the second floor of 4A1 date to the Middle Preclassic and the Terminal Preclassic. Of the 36 identifiable sherds, 8 are Middle Preclassic (Chunhinta, Joventud, and Dzudzuquil) and 24 date to the Terminal Preclassic. These Terminal Preclassic sherds exhibit a wide range of "Protoclassic" modes, including types of Xanaba such as Caucel chorreado and Dzalpach compuesto, one of which includes a pink paste that is characteristic of East Coast Protoclassic modes, and nine sherds of an olla that has the slip and paste of Sierra yet was rendered in a Xanaba form. Identifiable ceramics (n=24) from above the two floors consist of 25% Middle Preclassic (Chunhinta and Dzudzuquil); 25% Late Preclassic (including Terminal Preclassic modes of Sierra-Xanaba hybrids, Unto, and Huachinango); 16.67% Late Classic; and 33.33% Postclassic.

Units 4A2 and 4A3 had a similar chronological sequence with 4A3 also having a plaster floor located roughly 25 cm below the surface. From these test pits, only 25 sherds were identifiable and dated as follows: 12% Middle Preclassic, 76% Late to Terminal Preclassic (again with Sierra-Xanaba composites and Huachinango), and 12% Postclassic. Clearly, this small plaza and associated architecture was in place by the Late Preclassic and used most intensively during this period and into the transition to the Early Classic.

The percentage of slipped ollas from the Late Preclassic at this operation differed from other test pitted areas. Similar Op. 8, another architectural group forming a plaza, the ollas from this operation included a number of visual embellishments as seen in varieties recovered (i.e., Caucel chorreado, Dzalpach compuesto, Unto, and Tipikal). While the site average for percentage of slipped ollas from an operation was 36.676% for all ollas (s = 23.394), Op. 4 had significantly high percentage of slipped ollas (z-score = 2.014). Given the architectural context as a terminus group associated with an intrasite causeway, this highly visual olla assemblage likely added to the material background of performances that transpired at this location.

Operation 7: Southern Pyramid (Str. 1) and Caves

This operation explored the area around Str. 1, a pyramid with a base of 23 m by 18.8 m and standing 7.3 m tall, which is a total of 3,156.52 cubic meters. Atop the pyramid there sits a well-preserved stone superstructure that measures 3 m by 2 m. A small platform (Str. 1a), measuring 8m E/W by 7 m N/S with a 1 m elevation, connects to the western part of the pyramid, and, according to previous maps made by Maldonado, an intrasite sacbé that terminates about 25 m to the east of Str. 1 connects to an architectural group roughly 200 m to the southeast. There are two caves to the northwest of Str. 1: Cave 1 is 24 m away and Cave 2 is 61 m away. Both caves contain water, at least during the rainy season, and Cave 1 exhibits evidence of sascab mining. As mentioned in the previous chapter, the spatial juxtaposition of pyramids and caves is a well-known cosmological trope among the Maya and is thought to represent the place of creation and an access point to a sacred, supernatural realm (Bassie-Sweet 1991, 1996; Brady and Ashmore 1999; Vogt and Stuart 2005). The largest site along the intersite sacbé, Ucí, also has a large pyramid placed near the entrance of a cave, suggesting the position of Str. 1 functioned as a statement of power by accessing a sacred realm.

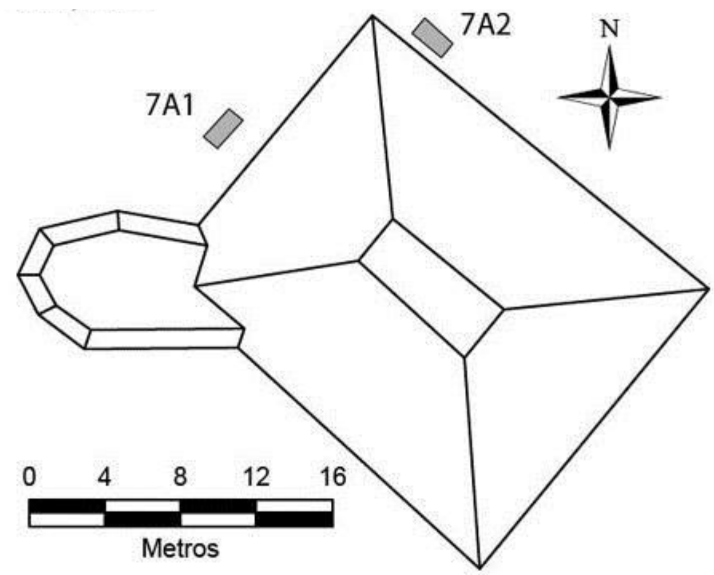

Figure 5.15. Map of Op. 7 and Str. 1 showing location of test pits.

In order to opportunistically place excavation units, ten 50 x 50 cm shovel tests were placed around Str. 1. Of note, the shovel tests placed on the east and south sides of Str. 1 were nearly completely devoid of artifacts—only one sherd was found in one of the four shovel tests pit in these areas—and the shovel tests along the northwestern part of the pyramid had the largest number of artifacts. Based on this high return of artifacts and the presence of a floor, two of the 50 x 50 cm shovel tests located in this northwestern area were expanded to 1 x 2 m units (Figure 5.15).

Unit 7A.1 is a 1 x 2 m unit that was expanded from the shovel test that contained the greatest number of ceramics (Figure 5.15). This unit was oriented flush with Str. 1. This unit was excavated in four lots and discovered a poorly preserved floor that was not present in the shovel test. The first lot, an arbitrary 20 cm level, consisted of a dark brown (7.5 YR 2.5/2) sandy loam soil with gravels and some chi'ich sized rocks (2 – 8 cm diameter). Lot 2 continued down at an arbitrary 20 cm through a similar soil. However, in this lot we see the presence of a poorly preserved floor that begins nearest Str. 1 but quickly dissipates as we move away from the structure. Near the bottom of this lot (approximately 40 cm bsd), we see the beginning of a chi'ich fill layer as well as sascab and broken pieces of floor. Additionally, just below this layer of chi'ich and sascab, we see a soil change to a lighter coloration. Thus this lot terminated at roughly 40-45 cmbsd and in some areas probably goes just below where the floor would have extended in antiquity. In this lot we also see the increase of ceramics to 352 g from 144 g in the previous lot. The floor was too badly preserved to try to differentiate between sealed and unsealed contexts so the lot was leveled at the floor-color change transition.

The third lot was also a 20 cm arbitrary level and consisted of a finer loam that was lighter in color (10 YR 3/3) with chi'ich and cobble fill among this sediment. While some dry-core fill associated with the floor is present in the southern half of the unit abutting the structure, this dry-core sequence is not present at this level in the northern half of the unit despite the fact that pieces of floor are present in the northern profile. In this lot, we also see a decrease of ceramics down to 190 g. This lot terminated between 55 and 70 cm bsd as a result of slope surface level.

The fourth lot consisted of large tabular fill stones (Figure 5.16) associated with leveling for floor construction on top of a reddish brown clayey silty loam known locally as chac luum (2.5 YR 2.5/2). Within this course of large flat rocks, there was very little soil. This level shows the dry-core fill did indeed occur throughout the unit albeit at different levels because of the undulating bedrock. Only five ceramic sherds, weighing a total of 41 g, were recovered from this lot. This lot ended with bedrock at approximately 85 cmbsd.

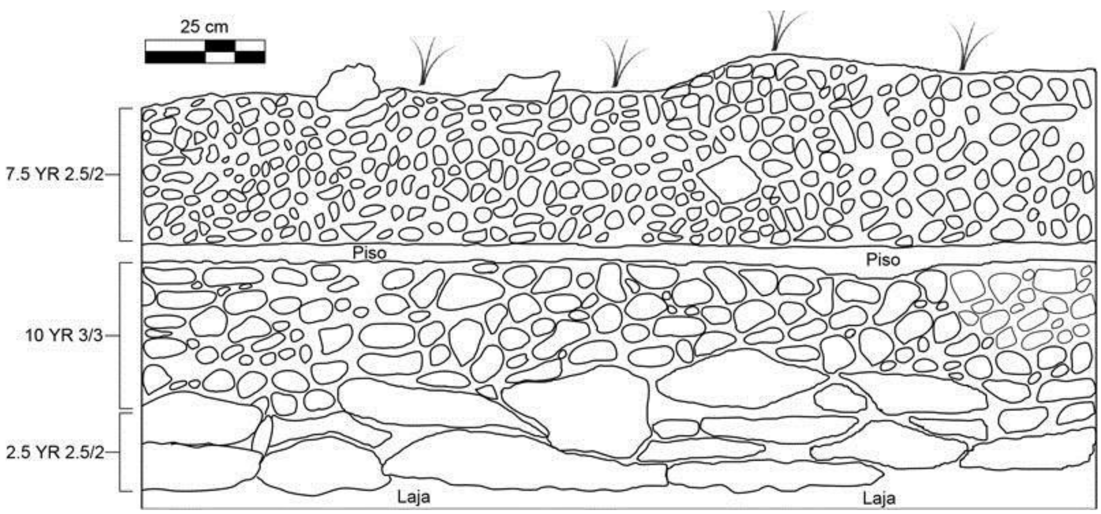

Figure 5.16. Profile drawing of southeast wall of Unit 7A1 showing single floor with fill stones beneath it.

Unit 7A.2 was expanded from the shovel test roughly 10 m to the northeast of the shovel test that was expanded into A.1 (Figure 5.15). This shovel test was expanded because we uncovered a floor that covered the vast majority of the shovel test and believed this unit could give chronological resolution as a result of the floor dividing occupations. This unit is oriented roughly east-west and is flush lengthwise against Str. 1.

The first lot consisted of a dark brown, sandy loam soil (7.5 YR 2.5/2) with gravel inclusions. A significant amount of chi'ich (~15%) and some large cobbles, both probably associated with Str. 1, were also present. The first 20 cm produced few ceramics, so the level was extended further down and terminated between 30 and 35 cm bsd. The majority of ceramics found were found below 20 cm; types identified in the field include Teabo and Ich Canziho and suggest a Late Classic occupation.

The second lot consisted of a soil change to a finer silty loam with a lighter coloration but still a darkish brown (10 YR 3/3). This lot ended with exposure of the floor present in the shovel test and was leveled off at this depth (between 40 and 55 cm bsd). In the southwestern and central parts of the unit the floor is well preserved but moving towards the northeast the preservation degrades. In the southeastern and north-central part of the unit, the floor is absent, probably as a result of the large roots documented in the previous lot.

The third and fourth lot consisted of the area without and with the floor, respectively, and terminated with large rocks which were probably part of a fill episode. The floor, which is located at a similar depth and looks similar to the floor discovered in Unit A1, is only preserved in the southwestern part of the unit—50 cm north of this corner to 130 cm east. In the southwest corner just below the floor, there is a thick layer of sascab and chi'ich fil, which dissipates moving to the east (Figure 5.17). Interestingly, this sascab-chi'ich area has a noticeably more grayish color, possibly from a burn episode or as a result of the creation of the sascab. Some ceramics also had this grayish sascab adhered to them.

Lot 5 consisted of large rocks (some 60 – 70 cm in length) used to level the area. Above these rocks is a brownish-grayish soil (10 YR 4/3) that is probably the result of this sediment layer mixing with parts of sascab/chi'ich fill layer. Under these large rocks is a reddish-brown sediment called chac luum (7.5 YR 2/3). Only three ceramic sherds were found in this lot. This lot terminated with bedrock and in some places large stones because they were difficult to remove from the unit.

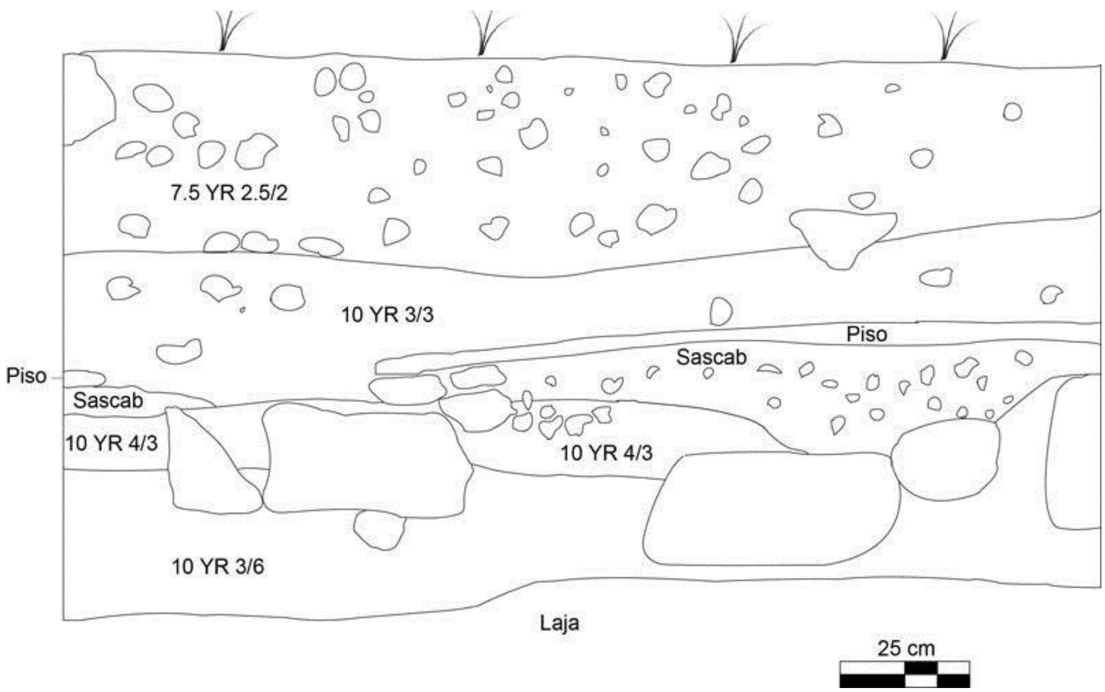

Figure 5.17. Profile drawing of south wall of unit 7A2 showing poorly preserved floor and sascab preparation beneath it.

Despite one large piece of conch found in shovel test 10 (located on the eastern side of Str. 1), only ceramics were recovered from this operation. The vast majority of ceramics date to either the Early Classic or Late Classic, although Postclassic (3 Navula sherds) and Terminal Preclassic/Protoclassic (e.g, Unto negro sobre estriado, Xanaba rojo, Tipikal rojo sobre estriado) sherds were also found. Late Classic occupation at this operation is more strongly manifested at unit 7A2. From lots 1 and 2, both above the floor, in unit 7A2, we recovered 55 sherds—that is 54.4% of all identifiable sherds from this unit—that date to the Late Classic period (e.g., Muna pizarra, Ich Canziho estriado, Chuburna café, and Teabo rojo). At this unit, all sherds but one piece of Muna pizarra found beneath the level of the floor date to the Early Classic and the Terminal Preclasic/Protoclassic, while the vast majority of the sherds above the layer of the floor date to the Late Classic period. Given the floor was better preserved in this unit compared to the other unit of the operation, it is likely this floor was constructed sometime during the Terminal Preclassic or Early Classic. However, a Late Classic occupation is not as clearly represented in the ceramics found in 7A1. Including the shovel test, this unit only yielded 15 sherds—the majority of which were Muna pizarra and Ich Canziho estriado (27.8% of the identifiable sherds from 7A2).

Of note is the significant presence of Early Classic fancy ceramic sherds (either bichrome or polychrome, finely made wares). Of the 54 identifiable sherds found in unit 7A1, 21 of them (38.9%) are either Timucuy naranja policromo, Tituc naranja polícromom, or some eroded form of these two. This is by far the highest percentage encountered at Ucanha. In unit 7A2 the number of fancy ceramic sherds was noticeably less—only 4 of 101 identifiable sherds. Form types of these fancy wares included ollas, cajetes, and cuencos, suggesting a variety of associated functions and activities. All evidence points to a Terminal Preclassic/Early Classic construction of the plaster floor of the north side of Str. 1 with the possible presence of diacritical feasting as represented by the significant number and forms of Early Classic fancy ceramic wares associated with this structure. This relatively robust Early Classic occupation is a markedly different pattern than seen elsewhere at Ucanha and shows that the site was occupied during this time and some part of the population was using socially distinctive ceramics during this period. However, only two sherds of ostentatious serving vessels typical of the Terminal Preclassic/Protoclassic (i.e., Shangurro and Huachinango) were recovered suggesting this monumental part of Ucanha was not as intensively utilized compared to other monumental contexts of the site, which have more robust aesthetically-pleasing ceramic assemblages from this period. Therefore, it is possible Str. 1 and the area around it was a later addition to Ucanha's monumental landscape and was used differently with regard to these spaces as socially integrative features. Nevertheless, coupled with the nearby intrasite causeway and the caves to the northwest, it is likely this area was an important feature on the lived landscaped of Ucanha.

Operation 8: Plaza Group and Strs. 228, 229, 230, and 231

While the group that encompasses Operation 8 is not technically a sacbé terminus group, its plazuela arrangement is rare for the project area, and it is located above 60 m to the north of the North Group (Figure 5.18). Additionally, since the Strs. 228, 229, 230, and 231 form a quadrangular plaza that measures approximately 1400 m^2, this area likely served the same function as sacbé termini groups: a focal point of gathering on the landscape of Ucanha. Both Strs. 229 and 230 have megalithic staircases, and there is a 4 m pyramidal structure (231). Unit 8A1 (2 x 2 m) was placed at the base of the megalithic staircase of Str. 229, and unit 8A2 (2 x 1 m) was placed in the middle of the plaza, roughly 13 m to the south of Str. 229 and 17 m southeast of the pyramid (Str. 231) (Figure 5.19).

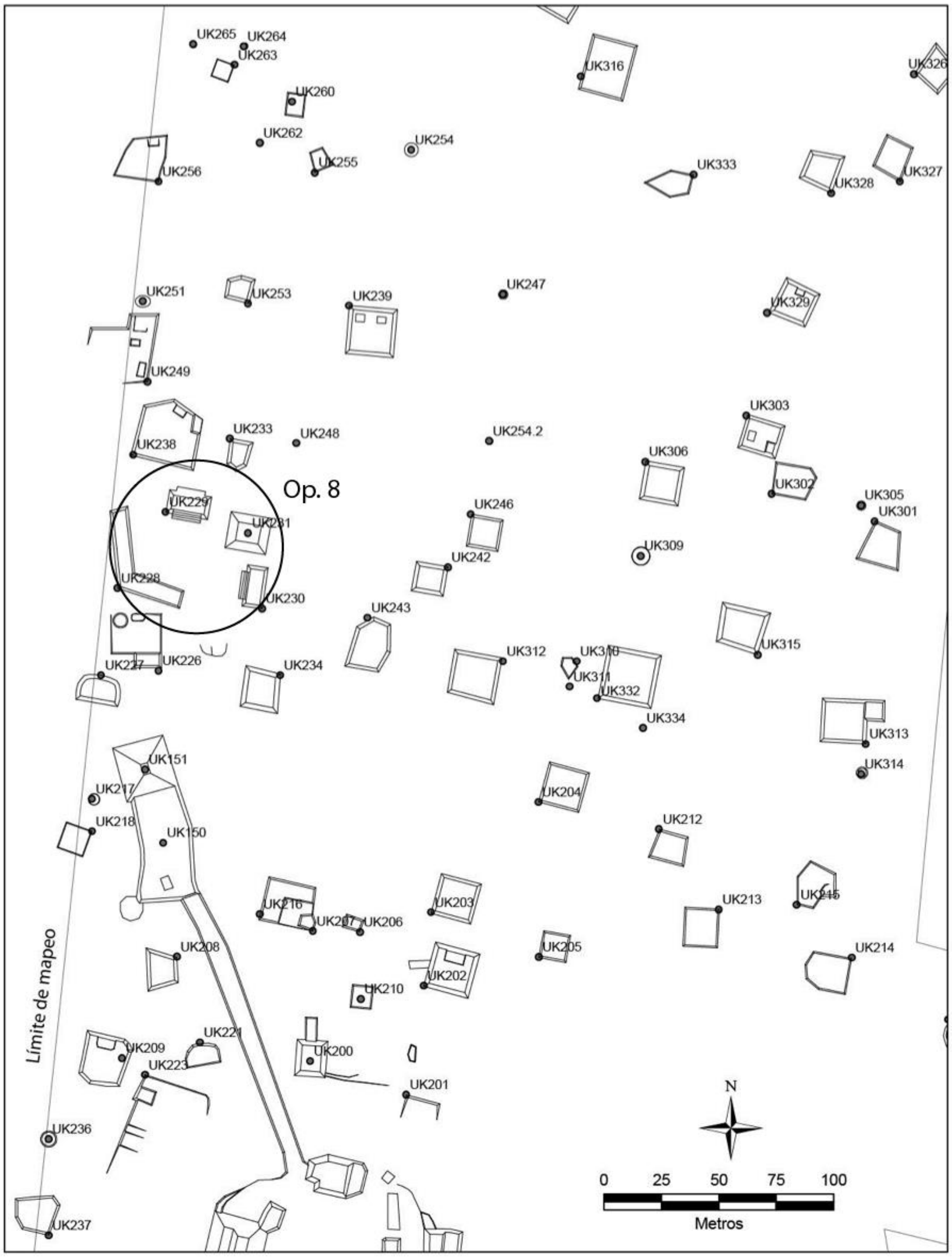

Figure 5.18. Map highlighting Op. 8 and its close proximity to the North Group.

The 2 x 2 m unit (8A1) located in front of the south side of Str. 229 was excavated in three lots and contained four distinct stratigraphic levels. The first lot consisted layer of dark organic-rich soil above a dark reddish-brown (5 YR 2.5/2). These soils were mixed with small gravels, which gave a grainy texture to the soil matrix. There were many roots and pieces of floor were also noticed. This lot ended at a roughly 20 cm arbitrary depth due to noticeably increased compaction in the soil. In this lot we found 68 pieces of ceramics weighing a total of 726 g. We also recovered one lithic artifact that weighed 7 g.

The second lot consisted of a similar dark reddish-brown soil (5 YR 2.5/2). In this lot there was an increase in the size of rocks. Many medium- and large-sized rocks, probably a fill layer, were noted. This lot was terminated at roughly 55 cmbsd because of a change in the size of rocks as well as another change towards a more compact soil. Fragmentary pieces of stucco were also noted in this lot. There was decrease in the number of artifacts recovered: 52 sherds weighing 544 g and two lithic artifacts weighing 12 g were found.

Finally, lot 3 consisted of a dark brown (7.5 YR 3/2) compact, sandy loam soil. In this lot there were only a few small rocks and roots. This lot terminated with bedrock between 77 and 88 cmbsd. In this lot we found a piece of conch weighing 18 g and 72 pieces of ceramic that weighed 537 g.

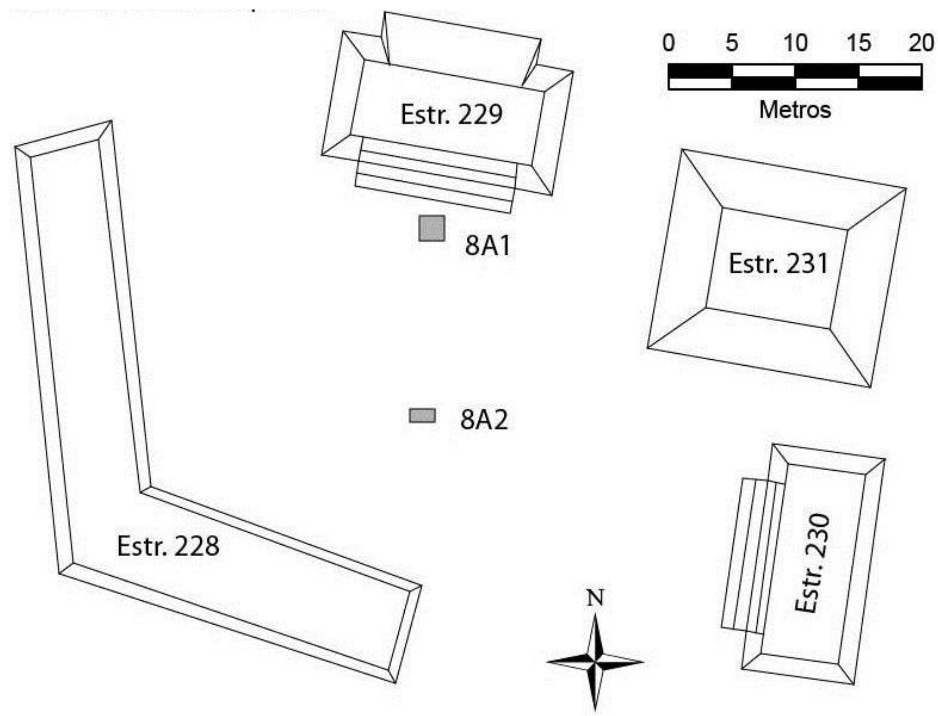

Figure 5.19. Close up of Op. 8 with location of test pits shown in gray.

The 1 x 2 m unit (8A2) located in the central plaza area was dug in two lots and had three stratigraphic levels. The first lot consisted of an organic-rich, dark reddish brown (5 YR 2.5/2) soil. Some roots were present. Rocky inclusions were albeit in less concentration than unit 1. The soil had a grainy texture and was classified as a sandy loam. This lot terminated around 10 cmbsd in the western part of the unit and 20 cmbsd in the eastern part of the unit because a change in rock size and decrease in organic matter was noticed. At the close of this lot several tabular stones were noticed in the western half of the unit. In this lot we recovered only seven ceramic sherds weighing a total of 68 g.

In the next lot, the soil was a similar color but had a smoother texture. There was a marked increase in the size of rocks as seen in 8A1-2. Directly above bedrock were the largest rocks, which point to some leveling episode. This lot and unit terminated with bedrock between 53 and 69 cmbsd (Figure). In this lot the amount of artifacts increased, and we found 16 sherds weighing a total of 236 g.

In 8A2 we recovered a total of 23 sherds, however 10 were too eroded for classification. Of the 13 identifiable sherds, seven date to the Late/Terminal Preclassic (Unto, Shangurro rojo sobre naranja, Sierra Xanaba, and Xanaba rojo), and six date to the Late Classic (Muna pizarra, Pucnanche compuesto, and Teabo rojo). Of final note, in 8A2-2 a reddish ceramic sherd (not sure which one; not noted in spreadsheet) we found had a cross-like design incised on a protuberance.

In general the ceramics analyzed from unit 1 provide us with a better understanding of the use of Str. 229 and its chronology. In 8A1, 192 sheds were recovered, but 77 were too eroded for classification. The identifiable sherds span from the Middle/Late Preclassic to the Postclassic. In lot 1 of unit 1, with the exception of two sherds, all of the sherds date to the Early Classic or later. Of the 42 identifiable sherds in 8A1-1, 12 (28.6%) date to the Late Preclassic (Huachinango bícromo inciso, Saban Chancenote, Xanaba rojo), 22 (52%) date to the Late Classic and three (7.1%) date to the Postclassic (Mama rojo, Yacman estriado). However, in lots 2 and 3 of 8A1, Late Preclassic ceramics dominates. Of the identifiable 73 sherds, 64 (87.7%) date to the Late Preclassic, including redwares (Xanaba and Sierra Rojo) as well as fancier wares such as Flor Mateo rojo sobre crema—which has protoclassic attributes—and Huachinango.

Another interesting trend from 8A1 was the disproportionately large number of serving vessels found compared to all other ceramic forms. Indeed, 83.3% of all Late Preclassic sherds (60) were service vessels; these include cuencos and cajetes of cream-slipped wares from the Southern Lowlands (Flor Mateo), Huachinango cajetes possibly from Ek Balam (Bey et al. 1998), and redware cuencos and cajetes from groups Xanaba and Sierra Rojo. This operation also had the highest percentage of service vessels compared to ollas (60:12), is nearly two standard deviations (z = -1.54) fewer ollas compared to all other excavated contexts. The remaining identifiable sherds were from ollas including an incised variety of Xanaba and Shangurro that would have added to the visual display of the associated ceramic assemblage. Cross-culturally “ostentatious” service wares are associated with feasting (Clark and Blake 1994; Junker 2001; LeCount 1999; Welch and Scarry 1995). Additionally, a higher ratio of service to culinary wares at elite courtyard residences in Xochicalco was an indicator of feasting and elevated status (Hirth 1993:138). Work from Izapa also found service vessels dominated assemblages of more public/serving/consumption contexts than a more balanced domestic which would also include preparation vessels (Rosenswig et al. 2018; see also Rosenswig 2007; Turkon 2004). Considering the backdrop of a megalithic staircase and a nearby smaller pyramid coupled with visually appealing service vessels, this area was possibly a locus associated with displays of food that was prepared elsewhere yet consumed in this intimate courtyard, not unlike the spatial contexts associated with diacritical feasting (Cook and Glowacki 2003; Dietler 2001; LeCount 1999, 2001). This idea will be further developed in Chapter 8.

Test-pitting Households

Before discussing the specifics of each operation, a few comments about excavation methods and stratigraphy are needed. First, most domestic architectural platforms consist of a single basal platform that supported largely perishable superstructures. Vegetation around the basal platform was cleared so that we could easily see the perimeter of the structure. Then all structures were drawn in a notebook using the tape and compass; this ensured a more accurate drawing than survey sketches since the latter were not systemically cleared before drawing. For test pit operations at residential platforms, a series of evenly spaced 50 x 50 cm shovel tests were placed around the structure in order to discover possible midden deposits, which are commonly found off-mound around the edges of platforms (Hayden and Cannon 1983; Hutson et al. 2007). The shovel tests with the highest number of ceramics were then expanded to either 1 x 1 m or 1 x 2 m test pits, typically with three test units per structure. Due to the lack of stratigraphic integrity because of bioturbation and thin soils, many test pits were excavated in arbitrary 20 cm levels. Most pits were excavated to bedrock though in a few pits large immovable stones above bedrock prevented us from reaching bedrock. Unfortunately, no intact plaster floors were found in non-monumental contexts; therefore, none of the artifacts come from sealed contexts. As discussed above, many of the contexts around monumental areas did have (partially) preserved floors that served as breaks for levels and sealed off contexts from mixing. The general lack of numerous distinct sediment or soil layers around non-monumental structures further complicated separating levels according to stratigraphic layers. In general test pits did not go down more than 60 cm and only two natural layers were present: a primary layer of dark, almost black organic-rich soil known locally as *box luum* and a secondary layer of iron-rich red sediment known locally as *kan luum*. When these soil horizons were present, excavations switched from arbitrary depths to following natural stratigraphy. Unless noted otherwise, this is the stratigraphic sequence for the test pits to be discussed in subsequent paragraphs. Given the shallow soils, the churning of earth from roots and rodents, and the absence of sealed contexts, many of the ceramics recovered were mixed deposits, containing pottery from multiple time periods in the same level. Upon completion, profiles were drawn, pictures were taken, and then units were backfilled. During the summer of 2014, I test pitted 15 different architectural groups (Figure 5.20).

Additionally, some notes about ceramic quantifications should be mentioned. Since gross weight and count can be misleading with regard to overall magnitude of ceramic presence, I use average density of ceramics as an indication of intensity or length of occupation. Therefore, I calculated ceramic density for each level to more accurately compare across different contexts throughout the site. The same could be done with other artifact classes such as obsidian, bone, lithics, etc. but given the near absence of these data sets, our efforts are focused on ceramics. From all test pit contexts that yielded ceramics, the median ceramic density was 1244.49 g/m^3 and the average was 1609.7 g/m^3 with a standard deviation of 1416.05 g/m^3. Ceramic density, in conjunction with other lines of data such as faunal remains and the presence of metates, can be helpful to identity middens associated with feasting (Rosenswig et al. 2018). Additionally, higher densities can indicate prolonged ceramic discard or serve as a proxy for the size of the household with larger households typically generating more trash and with larger households typically having a higher socioeconomic status (Netting 1982; Tourtellot 1988; Wilk 1984).

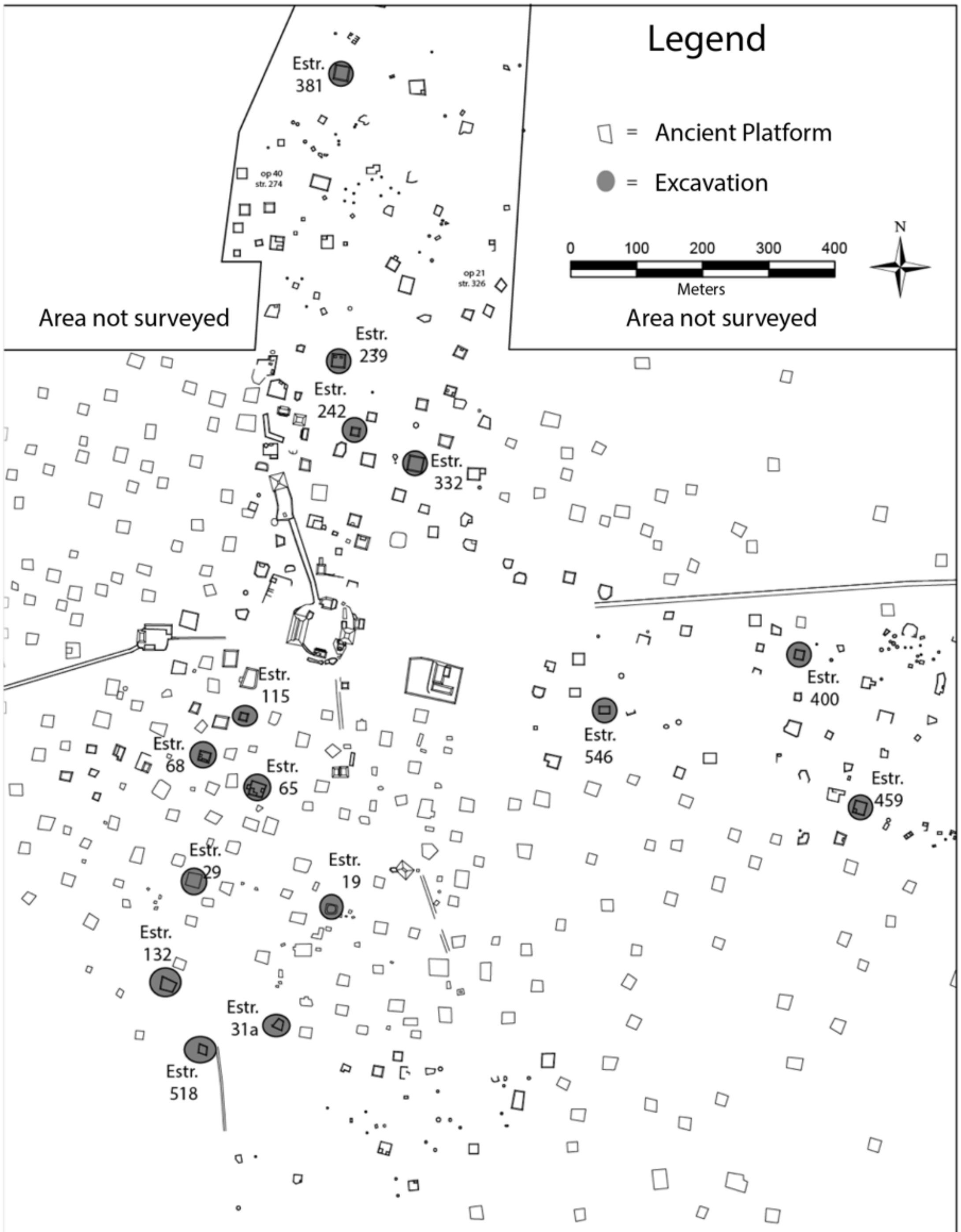

Figure 5.20. Map of Ucanha showing residential architectural groups that were test pitted.

From these residential compounds test pitted in 2014, 2,658 sherds (73.63%) were classifiable according to the Type:Variety system. Of these identifiable sherds, the vast majority date to the Late Preclassic (59.07%) with the next highest percentage coming from the Late Classic (23.33%). Additionally, ceramic counts indicate occupation, or at least activity, during the following periods: latter part of the Early Classic (14.44%), early part of the Early Classic (1.92%), Middle Preclassic (0.94%), and Postclassic (0.26%). One sherd of fine orange dating to the Terminal Classic was also found (0.04%). Clearly, the process of physical integration along the UCC coincides with a population as far as ceramic frequencies can be a proximate measure of occupation and demographics.

However, there are a few caveats surrounding these ceramic distributions: 1) the Early Classic numbers are surely deflated because they only consist of polychrome ceramics; this is because many of the ceramic groups (e.g, Sierra, Saban, Xanaba) extend from the Late Preclassic into the Early Classic and can only be possibly further subdivided through modal analysis (Andrews 1988; Gallareta and Castellanos 2012; Quiñones 2006; Quiñones and Boucher 2006). Also, ceramics associated with Oxkintok or the "Middle Classic" (e.g., Kanachen, Hunabchen, Kochol) have been chronologically placed into the latter part of the Early Classic since the distinction of a Middle Classic is unjustified (Varela Torrecilla and Braswell 2003) 2) The presence of some protoclassic[1] ceramics both seen in so-called "prestige" wares (e.g., a Shangurro sherd with mammiform supports, an Ixcanrio naranja polychrome sherd indicating a basket-like form, and Aguila naranja sherds) and "utilitarian" wares (e.g., Xanaba Caucel Chorreado sobre Rojo, Dzalpach Compuesto, and Sierra Laguna Verde Inciso) suggest finer ceramic resolution between the Preclassic/Classic transition is possible through closer attention to attribute analysis. Glover and Stanton (2010:72) argue this increased ceramic heterogeneity that occurred during the Terminal Preclassic between 75 BCE and CE 400 “resulted from growing populations attempting to differentiate themselves in a social environment marked by increasing stratification”. Both Glover and Stanton (2010) and Callaghan (2013:309) prefer the term Terminal Preclassic over Protoclassic because the latter carries a number of conflated concepts, nevertheless sites associated with the greater project area (e.g., Izamal) and demographically and temporally comparable to Ucanha (e.g., Komchen) use Protoclassic as a temporally distinct ceramic phase (Andrews 1988; Quiñones Cetina 2003). Regardless, the Late Preclassic appears to be the demographic height of Ucanha with either depopulation and/or a greatly reduced quality of life occurring sometime during the first few centuries of the Early Classic. All areas that were investigated, with the exception of three residential platforms and the palace (Str. 92), produced a late Early Classic ceramic component (CE 400 – 600) of less than 15% of the assemblage. Concomitantly, it is interesting to note that Ucí (Brady et al. 1998:Figure 6) and Izamal (Quiñones 2006; Quiñones and Boucher 2006) both have a Protoclassic ceramic component and both emerge as micro-regional and regional capitals, respectively, by the Early Classic. Indeed, Plank et al. (2018) argue the greater Uci-Cansahcab region was integrated into Izamal’s interaction sphere during the Terminal Preclassic/Early Classic transition with Izamal having a functional Protoclassic assemblage with modes such as mammiform supports as well as pale primary slips with flaky secondary slips and course white-to-pink pastes. Finally, X-ray diffraction analysis of Shangurro group of red-on-orange bichromes, which is the hallmark Protoclassic/Terminal Preclassic along the UCC, from a large assemblage of Protoclassic wares from Izamal suggests some Shangurro was produced at Izamal (Plank et al. 2018). Therefore, it is likely Late Preclassic percentages are slightly inflated and Early Classic percentages are deflated; nevertheless, polychromes associated with the Early Classic (i.e., Timucuy, Tituc, Dos Arroyos, Aguila, Dzidzibachi, and Balanza) are all more restricted in distribution among households at Ucanha.

Op. 9/Str. 68

Operation 9 consists three test pits placed on the western side of Structure 68, which was roughly 260 m to the southwest of the Central Group and had a surface area of 289 m^2 and a volume of 491 m^3. (Figure 5.21). This structure measures roughly 2 m tall and two superstructures: one to the west measuring roughly 5 m by 6m and longer rectangular one on the south measuring roughly 9 m by 2 m. Along the western side of the structure some megalithic stones measuring 50 x 40 cm are present, and they are somewhat pillow-shaped with clearly worked flat surfaces. On the west and southwest side of the structure it looks like fill was brought in to level out the area. At 20 – 25 cmbsd there is a layer of rock fill in several shovel tests as well as in levels 9.A1-1 and 9.B1-1 that is accompanied by pieces of plaster flooring. These fragmented plaster pieces were 3 – 5 cm thick, compact, and had smooth surface suggesting at one point the area beyond the basal platform was prepared and plastered and served as an activity area and/or that the platform itself was covered in stucco. From the first levels of these three test pits (i.e., above the plastering episode), the ceramics mostly date to the Late Classic (9A1-1 = 95.56%; 9A2-1 = 85%; 9B1-1 41.46%). Yet the levels below the stucco fragments and with the fill mostly date to the Late and Terminal Preclassic. Other plastering episodes, such as those around pyramids and in the central plaza, date to the

Late or Terminal Preclassic and, given the date of the ceramics below the fill layer at this operation, it is likely the flooring fragments from this structure also date to this time period.

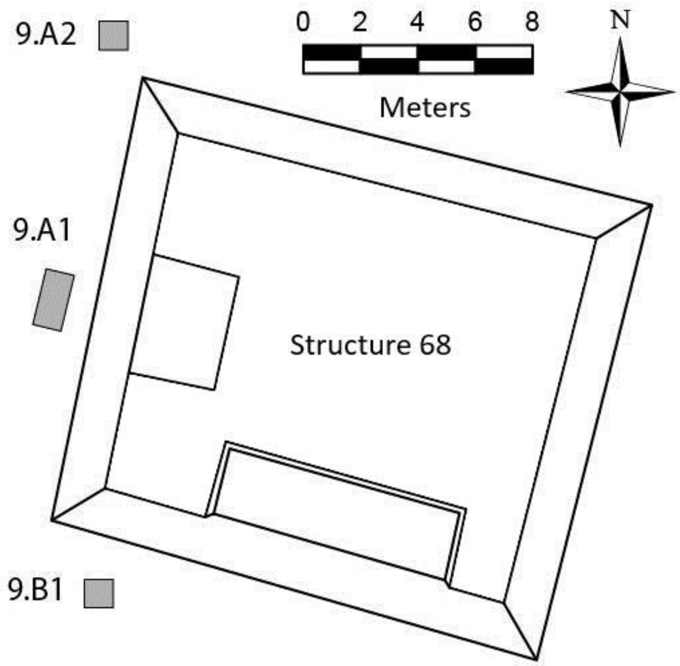

Figure. 5.21. Map of Op 9 test pits and Str. 68.

As seen elsewhere at Ucanha, this structure was occupied intensively during the Late Preclassic and the Late Classic. Of the 241 identifiable sherds, 53.11% (128) date to the Late Preclassic and 41.49% (100) date to the Late Classic. Three sherds date to the Early Classic, one to the Middle Preclassic (Chunhinta Ucu), and nine to the later part of the Early Classic.

During the Late Preclassic this structure also had a relatively high diversity of ceramics including four different types of bichrome wares (Carolina bicromo inciso, Dzilam verde inciso, Huachinango bicromo inciso, and two different varieties of Shangurro, one of which is an olla form with interior striations) and eight different varieties of utilitarian wares including notable types like Such negro y rojo (only found here and at the palace), Tancah burdo (unique to the project thus far common in the Yalahau region), and Dzalpach compuesto, a type within the Xanaba group associated with the Protoclassic at Izamal (Quiñones and Boucher 2006). Bichromes account for 11.72% of the Late Preclassic assemblage, with Carolina and Shangurro ollas present. Another type, Aguila naranja, widely associated with Protoclassic (Bachand 2003; Brady et al. 1998; Quiñones 2006), was also recovered but was placed chronologically in the Early Classic because it is a true polychrome. Interestingly, during the Late Preclassic the ratio of storage or food preparation vessels (107 olla sherds) to serving vessels (19 cajete sherds) is 5.63:1, suggesting this area was more heavily involved in storage or food production. Indeed, this ratio deviates significantly (z-score 2.43) and is the highest at Ucanha. Levels 9.B1-2 and 9.B1-3 also have relatively high densities of ceramics, 3459.15 g/m3 and 2431.82 g/m3, respectively, which date to the Late Preclassic. Of the 75 identifiable sherds from these contexts, 69 date to the Late Preclassic.

Op. 10/Str. 115

Operation 10 consisted of four test pits placed around Structure 115 (Figure 5.22), which measured 14 m (east and west sides) by 12 m on the north, and 16 m on the south with a height of roughly 1.8 m (309.44 m^3). Str. 115 is located approximately 180 m to the southwest of the Central Group. There was a fragment of a metate in the southeast corner and a complete metate in the northeast corner. Similar to Op. 9, fragments of roughly 4 cm-thick plaster floor were found in the first 20 cm of 10A1 and 10B1, suggesting the empty space around this structure or the platform itself was once plastered. From contexts below this first arbitrary 20 cm, only four sherds out of 115 identifiable sherds dated later than the Late Preclassic. Given that Str. 68 and Str. 115 are roughly 100 m away from each other, the plaster fragments were roughly of the same thickness, and were encountered at the same depth, it is likely the plastering episodes around these two structures occurred during the same ceramic phase.

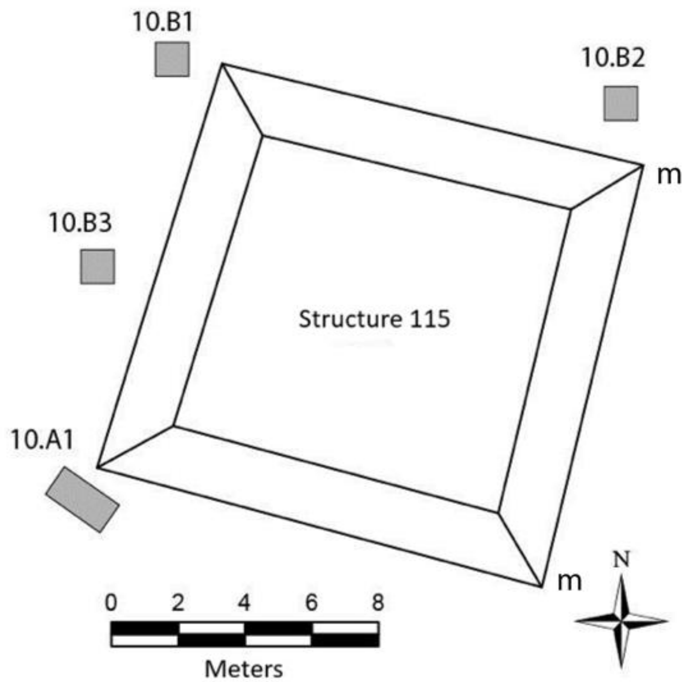

Figure 5.22. Map of Op 10 test pits and Str. 115 with metates labeled as "m".

Ceramic analysis indicates this structure was occupied during the Late Preclassic with an ephemeral occupation during the Late Classic. Of the 115 identifiable sherds, 86.96% (n = 100) date to the Late Preclassic, with many of these sherds having forms and surface treatments that are characteristic of the Terminal Preclassic. For example, three different bichrome types are present (Huachinango, Dzilam, and Shangurro; 9.09% of Late Preclassic sherds) as well as a variety of redwares that contain "protoclassic" attributes, including Laguna Verde with a flaky red slip and Xanaba with a pinkish paste.

A sherd of a flange from a Polvero Chikin composite silhouette bowl is also a form associated with protoclassic experimentation. Unto and Tipikal, slipped ollas from the Terminal Preclassic, were also present. Unit B3, which only had two sherds that dated after the Later Preclassic, also yielded 48 grams of shell and a fragment of a mano. The ratio of jars to serving vessels during this time period was 2.3:1, which is close to average (3:1).

Nine sherds from the Late Classic, five from the latter half of the Early Classic, and one from the Middle Preclassic (thin-walled Joventud) were also recovered. No polychromes that date securely to the the Early Classic were found.

Op. 11/Str. 65

Operation 11 investigated Structure 65, a roughly 25 x 25 m megalithic platform that tops out at around 2 m high and contained three superstructures (Figure 5.23), each of which approximates the size of a traditional Maya house (Wauchope 1938). More extensive broad exposures on top of this platform uncovered other features to reveal a configuration of an "open front frame brace" architectural layout (see chapter 7). Some of the megalithic stones used to form the basal platform were some of the largest we encountered. Results from shovel tests around the entire structure again show the highest frequencies of ceramics were located on the west side of the structure, so four test units were excavated on that side of the platform. With a basal platform volume of 1000 m3 and a superstructure built on a terrace, Structure 65 was one of the most labor-intensive non-monumental construction episodes at Ucanha.

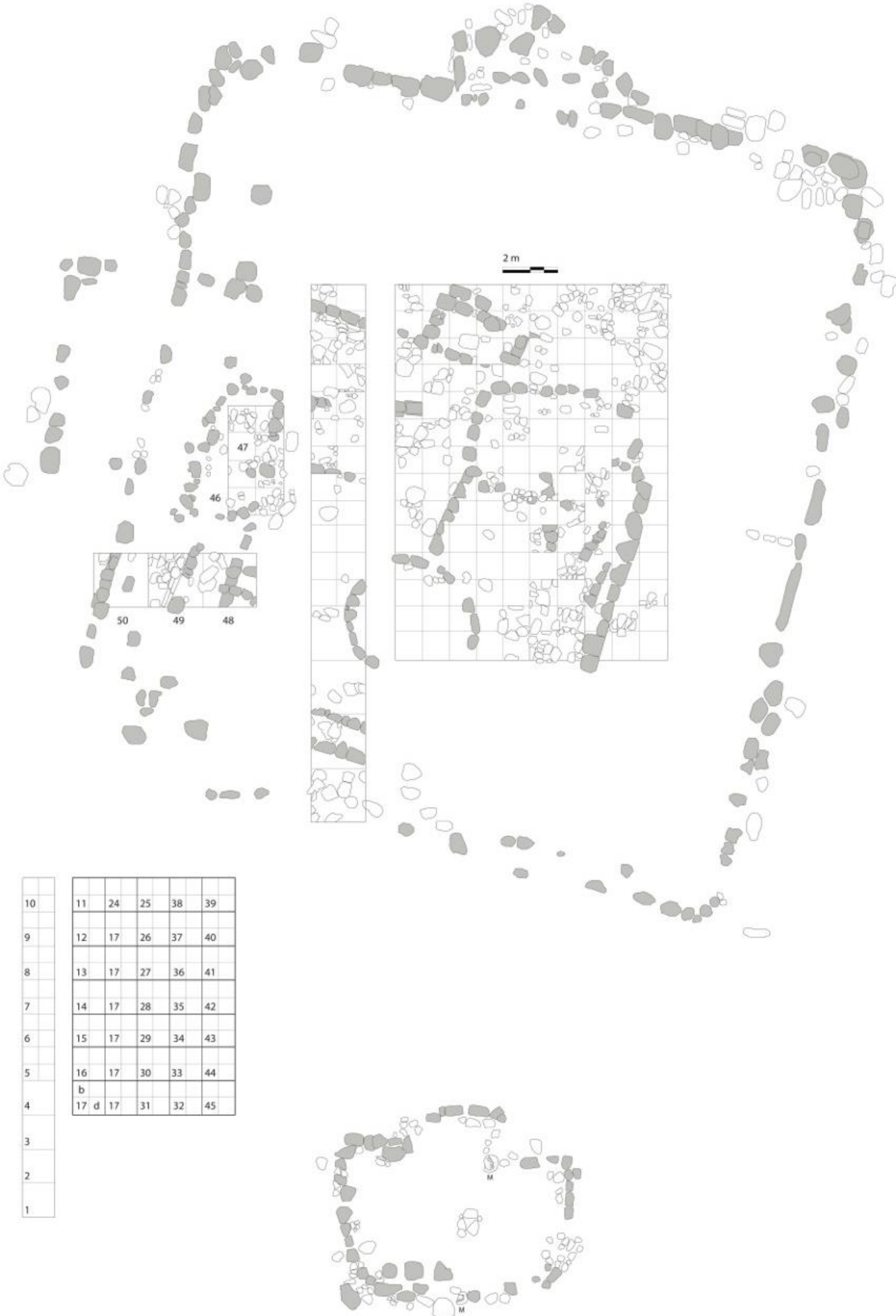

Figure 5.23. Plan map of Op. 11 / Str. 65.

The ceramics recovered from this operation suggest this household had an extremely elevated quality of life during the Late Preclassic. Of the 498 identifiable sherds, 87.75% (n = 437) dated to the Late Preclassic. Unit 11B2, for example, produced the most ceramics (n = 411) of any non-monumental platform at Ucanha, and, like the vast majority of structures, also dated primarily to the Late Preclassic. While Levels 1 and 4 had a below average ceramic density (1280.00 and 1313.33 g/m3, respectively), Levels 2 and 3 had above average densities (2552.08 and 4400.00 g/m3). 11B2-3 had one of the highest densities at the site at more than twice the average. In 11B2-3 we also recovered seven pieces of faunal bone weighing 25 g. Of the 328 identifiable sherds found at 14B2, 315 dated to the Late Preclassic (96.04%). Of these 107 were Shangurro, the highest count for any residential test pit, including the varieties Pasta Rosa, Impresa, Estrias Interiores (30 olla sherds), and Shangurro. Perhaps most importantly, seven Shangurro sherds were from a mammiform support (Figure 5.24), an integral characteristic of Protoclassic-style ceramics (Brady et al. 1998; Callaghan 2014; Quiñones 2006; Quiñones and Boucher 2006; Reese-Taylor and Walker 2002).

Figure 5.24. Fragments of a Shangurro mammiform support.

Reese-Taylor and Walker (2002) ideologically associate these mammiform supports with female fertility and Ix Chel and argue they were used in renewal ceremonies. We also found an Ixcanrio Naranja Policroma sherd that was a handle from a peculiar basket form vessel. Microscopic ceramic analyses of sherds from Izamal indicate local iterations of an incised variety Shangurro as well as a double slipped Ixcanrio (Ancona Aragón et al. 2013; Plank et al. 2018). Since incised and impressed varieties of Shangurro were found at Str. 65, it is possible these ceramics attest to the social capabilities of this household through stylistic connections to Izamal. Other ceramics of note from this period include two types of Flor (Flor Crema and Mateo Rojo Sobre Crema) and a Sierra Red with painted black design, a variety that is unique to the project; both are associated with the Protoclassic and likely originated from the Peten. All of these aforementioned ceramics are associated with social groups of high status and were a component of internal social differentiation among households at Ucanha around the time of, or shortly after, physical integration with Ucí via the intersite sacbé.

Coupled with the amount of architectural investment, the ability to procure a diverse and aesthetically charged ceramic assemblage marks the inhabitants of this structure as one of the most socially distinguished households during the Late Preclassic and into the Early Classic. Indeed, this household had access to seven different kinds of bichromes during the Late Preclassic. Unlike many of the other residential architectural compounds, there was relatively little morphological or surficial experimentation among the redwares, with only one sherd of Sierra Altamira and one black trickle painted Sierra (mentioned above), suggesting the inhabitants social differentiated themselves through a wider array of fancier, more colorful ceramics, which, in turn, indexed their social capabilities of procuring ceramics from more diverse economic networks. In fact, the number of Shangurro sherds recovered from Op. 11 (n = 138, which is 27.71% of the entire Late Preclassic assemblage) vastly outnumber the presence of Xanaba and Sierra sherds (n = 23). Ceramics recovered from the Early Classic—Aguila and Tituc—are sparse (n = 4); however, it shows the ability of this household to procure high-prestige polychromes from the Peten (Aguila), which is only present at one other household (Op. 19/Str. 239).

It is likely the inhabitants of Str. 65 were able to negotiate a position of high social distinction and remain in that position into the Early Classic as a result of their quality of life. Reese-Taylor and Walker (2002:105) argue widespread attributes of these Protoclassic ceramics (e.g., mammiform supports or the presence of Ixcanrio Orange Polychromes) "reflected attempts to renew alliances and reinvent a larger social order" vis-à-vis the sociopolitical tumult surrounding the Terminal Preclassic. The diversity of ostentatious wares during Late Preclassic, and probably more specifically the Terminal Preclassic, coupled with the elevated density of ceramics is a materialization of a higher quality of life. Furthermore, this elevated social differentiation and use of these ceramic wares would have been a component of identity insofar as the materiality of objects inform identity and set the stage for practical knowledge. Callaghan (2013:335) argues these types of flashy pottery used during diacritical feasting "would have represented a major innovation in competitive feasting", which would have been a broader component of greater stratification witnessed during the Terminal Preclassic. Finally, the external connections materialized in ceramics from Str. 65 that stretch across the Maya world (e.g., Hauchinango from Ek Balam [Bey et al. 1998] as well as Ixcanrio Orange

Polychromes and Aguila Orange from the Peten and Campeche [Sosa et al. 2014:226] likely via Izamal [Quinones 2006]) attest to the elevated capabilities of this household. Since these types of wares are only found at the local palace structure and further afield (e.g, Ucí and Izamal), the inhabitants of Str. 65 probably acquired them through elite gifting networks. Interestingly, 87.27% of the ceramic assemblage recovered from these test pits date to the Late Preclassic. It is possible this structure served as backdrop for elite-elite interactions, likely hosting elites from Ucí, at the expense of a previous more communal approach to more inclusive rituals and economic resources (see Joyce 2008).

Op. 12/Str. 31a

Operation 12 consisted of two test pits placed along the south of Structure 31a, a trapezoid-shaped platform with a volume of 176.19 m^3 located just to the southeast of the northern rejollada nearly 600 m from the Central Group. Since rejolladas had the potential to be important ecological resources (Kepecs and Boucher 1996; Munro-Stasiuk et al. 2014; see also Chapter 4), especially in an area with thin soils, I wanted to test whether or not this resource was controlled by elites or more of an open, communal resource. Dwellings near un-walled rejolladas (similar to Str. 132, Figure 3) located in the periphery of Chichén Itzá had wealthier ceramic assembles suggesting some elite control over these resources (Kepecs and Boucher 1996:77-78). If a similar practice was present at Ucanha, I would expect a relatively wealthy ceramic assemblage and higher quality of life.

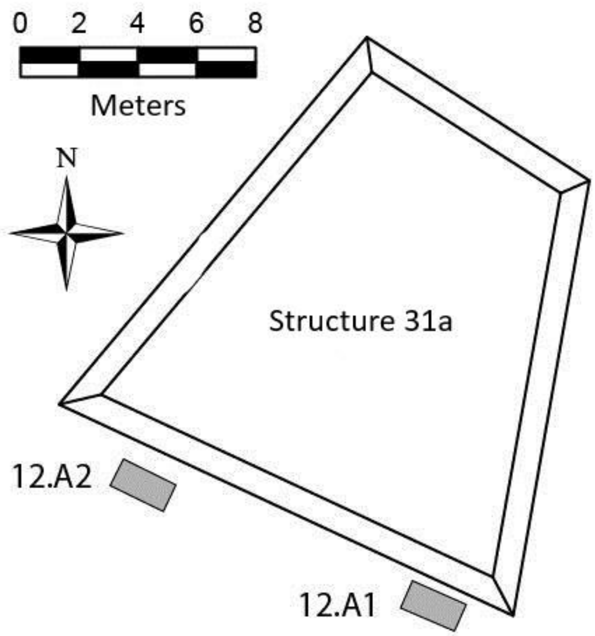

Figure 5.25. Map of Op 12 showing location of test pits around Str. 31a.

This operation yielded few ceramics and had no indication of plastering around open, off-mound areas. Only 30 identifiable sherds were recovered, with 40% (n = 12) dating to the Middle Preclassic (all a Dzudzuquil crema a bayo bowl) and 53.33% (n =16) dating to the Late Preclassic (Shangurro and Chancenote). Interestingly, a household with a relatively poor ceramic assemblage still had the ability to procure Shangurro, a type associate with relatively wealthy Terminal Preclassic contexts. One sherd of Batres and Arena were also recovered.

Overall, this platform does not appear to have a relatively wealthy ceramic assemblage at any point during its occupation. This suggests either access to the rejollada was tightly controlled by a managerial elite class or that the rejolladas at Ucanha simply were not a valuable ecological feature that drew people towards them. The latter interpretation is bolstered by the fact that the southern rejollada attracted few households and that the geology of these broader and shallower rejolladas were not as fertile as the steeper-walled and deeper ones seen to the east around Chichen Itza (Munro-Stasiuk et al. 2014). Nevertheless, given that isotopic analyses of soils from rejolladas located in elite spaces at Ucí exhibited evidence for the growth of maize in antiquity, it is possible this rejollada was controlled by an elite group. The low density of ceramic discard—only an average of 202.5 g/m3 for the entire operation—indicates an ephemeral, possibly seasonal occupation associated with agricultural activities at the rejollada, however. It is interesting to note a complete absence of a Late Classic component.

Op. 13/Str. 132

Operation 13 consisted of three test pits around Str. 132 (Figure 5.26), which is located roughly 20 m to the west of the rejollada and has a volume of 376.88 m^3. It has megalithic stones around all sides of the basal platform, yet they are intermittent. The stratigraphy encountered was the general pattern described earlier and no pieces of stucco were recovered. This structure also received more extensive and broader excavations, which will be thoroughly discussed in Chapter 7.

Like Op. 12, this operation was placed ta a domestic platform near an ecological resource to see whether or not this location had an impact on quality of life and economic potentials. Similar to Op. 12, few identifiable ceramics were recovered suggesting proximity to a locus of potentially more productive agricultural land does not correlate with increased household quality of life. Of the 48 identifiable sherds recovered, 75% (n = 36) date to the Late Preclassic. Nevertheless, this small assemblage contains many different kinds of Terminal Preclassic ceramics including three varieties of bichromes (Dzilam, Huachinango, and Shangurro) as well as other ceramics associated with protoclassic experimentation, including Sierra Laguna Verde, Percebes, and Polvero with a special applique.

Other time periods present include the Late Classic (16.67%, n = 8), the late part of the Early Classic/early part of the Late Classic (6.25%, n = 3), and one rim from a Fine Orange vase from the Terminal Classic.

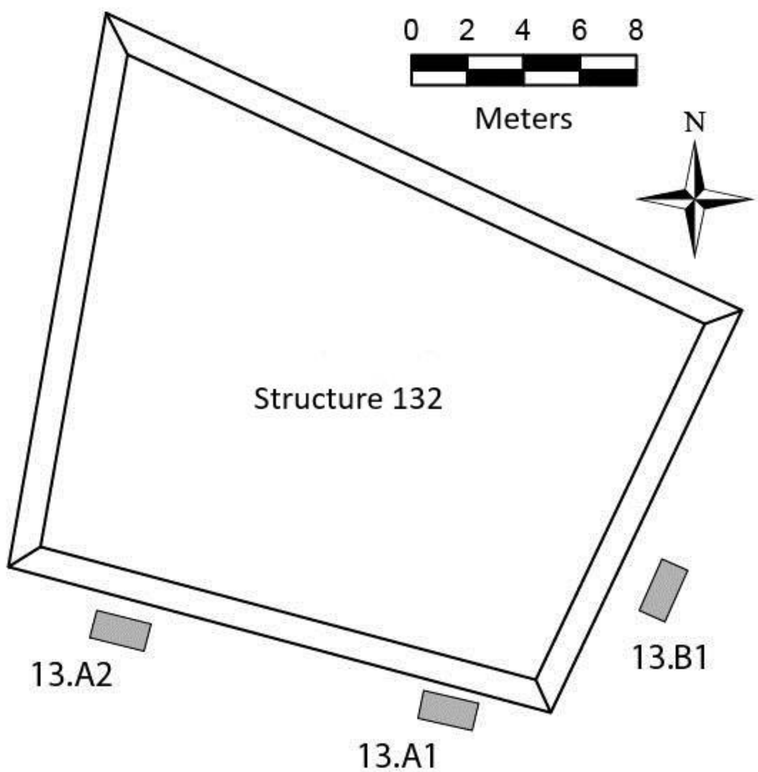

Figure 5.26. Map of Op 13 showing location of test pits around Str. 132.

Op. 14/Str. 518

Operation 14 investigated Structure 518, a platform measuring 14 m by 13 m, a height of 1 m, and a volume of only 196 cubic meters. This structure was not megalithic and was located 672 m to the south of the Central Group. Survey revealed a sacbé that abutted the east side of Str. 518 and continued to the south for approximately 150 m and then stopped. Of the ten shovel tests placed around the structure, only the three located on the north and northwest recovered pottery (Figure 5.27). We placed a 1 x 2 m unit (14.A1) on the west/northwest corner of Str. 518. Upon investigating 14.A1 it was noticed that the majority of ceramics were coming from the northeastern part of the unit so UCRIP staff expanded a 70 cm x 70 cm in this area and labeled it 14.A2. Both units were excavated in one level and terminated with bedrock at only roughly 25 cm.

Ceramics indicate this structure was occupied during the Late Classic since 91.43% (n = 64) of the identified sherds date to this period. Types found are the typical Sotuta wares (Teabo, Muna, and Ich Canziho). Only 5.71% of the identifiable sherds (two rim sherds from a Huachinango bowl and one Sierra sherd) date to the Late Preclassic. Given this ceramic distribution, it is likely this structure was only occupied during the Late Classic.

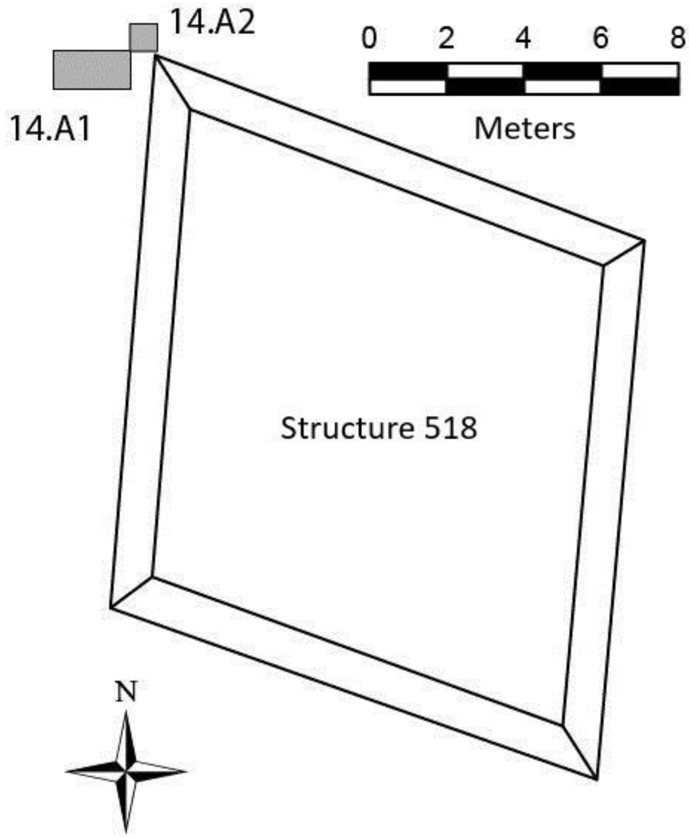

Figure 5.27. Map of Op 14 showing location of test pits around Str. 518.

Op. 18/Str. 242

Operation 18 investigated Structure 242, a rectangular megalithic platform measuring 14 m north/south by 13 m east/west and a height of 1.7 m, giving it a volume of 309.4 cubic meters. This structure was located 310 m to northeast of the Central Group. Megalithic stones do not encircle the entire platform but are present as tumble in the northwest corner, two are in place on the northern side, and one is in place on the southeast corner. Shovel tests indicate ceramic discard was more prevalent on the west side of the structure, in general, and at the northwest corner, in particular (Figure 5.28). Two complete metates were also present. One is roughly 5 m to the northeast of the northeastern corner of unit 18.A2 and measured 95 cm east/west and 65 cm north/south. The other metate is located roughly 4 m south of the southeastern corner of the platform. A nearby shovel test recovered a mano that was likely associated with this metate; however, only one sherd was found in this shovel test so it was not expanded to a test unit.

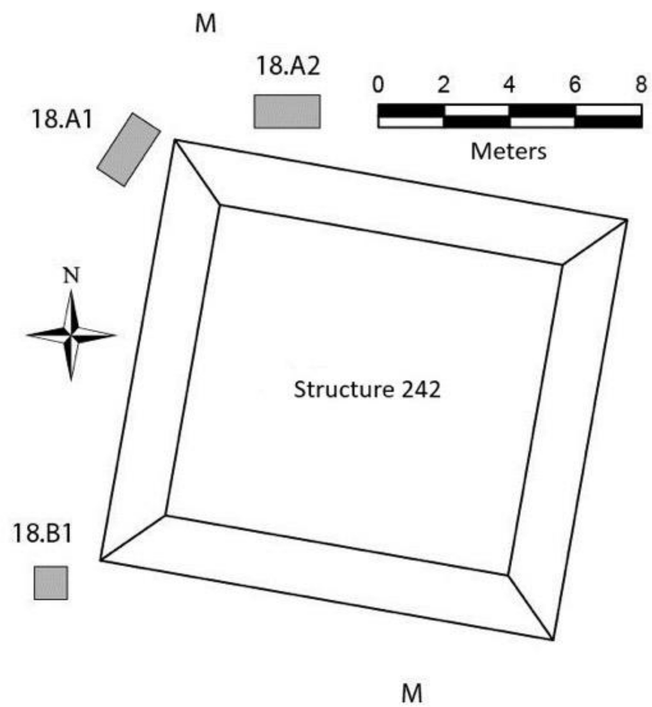

Figure 5.28. Map of Op 18 showing location of test pits around Str. 242 with metates labeled as “m”.

The megalithic architectural style coupled with ceramic frequencies indicate Str. 242 was constructed and most intensively occupied during the Late Preclassic. Indeed, 85% of identifiable sherds (136 of 160) were from this time period, including three different bichromes (Dzilam, Shangurro, and Hauchinango) and eight different varieties of monochrome wares, including Xanaba Rojo Zona Punzada and Polvero Chikin, types that are associated with Terminal Preclassic/Protoclassic assemblages elsewhere. However, only 5.26% of the assemblage is bichrome (cf. 20.37% from other households with a s = 17.4), this household is not quantitative wealth with regard to fancy ceramic access. Since one metate can typically meet the caloric needs of the household, the presence of two metates probably allowed for simultaneous food preparation labor for that beyond the immediate household needs, which argues these inhabitants possibly provided food needs for wealthier households (Brown 2001; Rosenswig 2007; Welch and Scarry 1995). Given that megalithic architectural style is typically found at larger platforms at Ucanha it seems the household at this structure was able to materialize some wealth through architectural elaborations and labor mobilization.

It seems likely, however, that this structure was abandoned or its inhabitants became greatly impoverished after the Late Preclassic. While ceramics from the Early Classic, Middle Classic, and Late Classic are present, none have more than 11 sherds. As argued elsewhere, the inhabitants of Str. 242 may have used perishable containers such as gourds and baskets (Hutson and Davies 2015); however, this is unlikely given the robust Middle Classic and Late Classic assemblages at other households at Ucanha.

Op. 19/ Str. 239

Operation 19 investigated Structure 239, a 21 x 21 m megalithic platform, with a maximum height of 1.75 m higher (total volume of 771.75 m^3) and two 5 m x 6 m superstructures. There were also three large basin-like metates, two of which were in place and one that was in tumble along the eastern side, and two smaller metates (Figure 5.29) located in tumble on the southwest corner. Megalithic stones are present; however, they are rather crude unlike the well-defined “pillow stones” at Aké and Izamal. On the south side there are two courses of stone making up the basal platform. While the other sides appear to have two courses of stone as well, the large amount of tumble makes it difficult to tell. This structure was more extensively excavated and will be discussed more in Chapter 7.

Excavation units produced a variety of ceramics, so they will be discussed in more detail. Of the190 identifiable sherds from 19.A1, 117 dated to the Late Preclassic (61.58%), two to the Middle Preclassic (Bakxoc), three to the beginning of the Early Classic, 44 to the later part of the Early Classic (23.16%;), and 23 to the Late Classic (12.11%). Three different bichromes (19 sherds) from the Late Preclassic were found: Dzilam, Huachinango, and Shangurro. We also recovered a Caucel Chorreado sherd, a Xanaba type that is associated with "Protoclassic" (75 BC – AD 400) ceramics in the northern plains of the Yucatán (Quiñones and Boucher 2006). Polychrome sherds from the Early Classic—a Dzidzibachi cajete rim and a Tituc basal flange—also attest to the high status of this household. There is also a noticeable later Early Classic component that includes a diverse assemblage of sherds, including Hulul Estriado, Arena, Becoob, Oxil, Maxcanu, and Hunabchen. The Late Classic component is composed of Ich Canziho with the exception of two Teabo cuenco sherds.

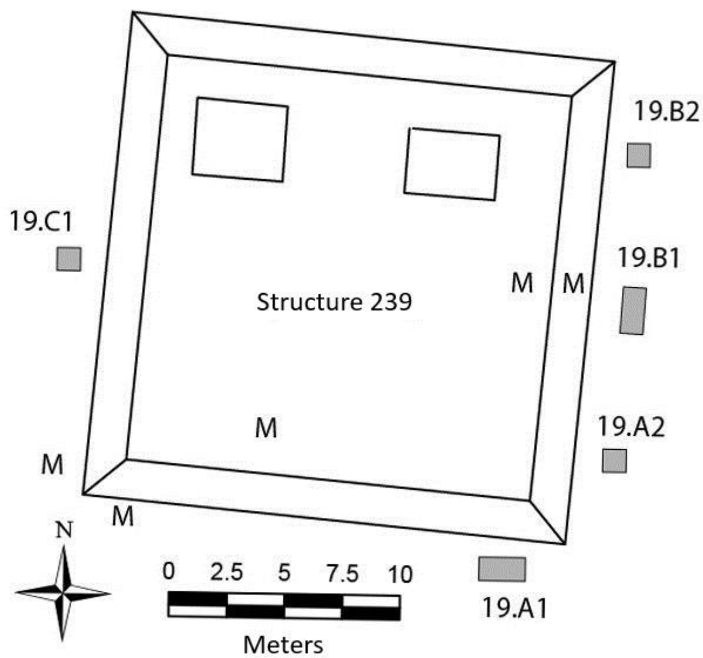

Figure 5.29. Map of Op 19 showing location of test pits around Str. 239 with metates labeled as “m”.

Overall, Unit 19.A2 produced the fewest number and the lowest density of ceramics of the operation. Of the 55 identifiable sherds, 33 dated to the Late Preclassic (60%), seven from the Middle Preclassic (12.72%), three from the Early Classic (5.45%), four from the Middle Classic (7.27%), and eight from the Late Classic (14.55%). There is a decent presence of Middle Preclassic sherds (Chunhinta, Joventud, Bakxoc) suggesting this location has been occupied for some time. From the Late Preclassic notable sherds include Dzilam and six sherds that have three different pastes from a Tipikal olla. This variation is conistent with the technial and stylistic experimentation of Protoclassic ceramics. Again, we found an Early Classic polychrome (Timucuy basal flange).

Unit 19.B1 produced the highest average ceramic density of all contexts from the 2014 test pitting at Ucanha. We collected 474 sherds from this unit at an average of ceramic density of 5108.29 g/m3. As seen with other units at Op. 19, ceramic density increased with depth: 3765.71, 5206.67, 6352.49 g/m3, respectively. Levels 2 and 3 are more than two standard deviations higher than the site average, and 19.B1-3 has the highest ceramic density for any level at Ucanha. Of the 404 identifiable sherds, the vast majority are from the Late Preclassic (287 or 71.04%). Also found were two sherds from the Middle Preclassic (Kuche Inciso and Joventud), 17 (4.21%) from the Early Classic (including nine Tituc sherds), 56 (13.86%) from the later part of the Early Classic (including a Tiznuk Compuesto cazuela and Chencoh vase), and 42 (10.40%) from the Late Classic. Of the 287 sherds from the Late Preclassic, 28 are from bichromes, including Huachinango, Dzilam, Shangurro, and Valladolid Inciso. The only other context that had Valladolid Inciso was the palace (Str. 92). There were also three types of Xanaba other than the standard type; Caucel chorreado, Dzalpach Compuesto, and an eroded incised version were all recovered. Taken together, the Late Preclassic sherds recovered from 19.B1 are another clear example of a Protoclassic assemblage at an Ucanha household. Furthermore, this unit also has the highest number of Early Classic polychromes collected from a unit that investigated non-monumental architecture. These high ceramic densities coupled with the high number of metates—the site average is just 0.733 metates per platform—suggest this household was possibly a venue of feasting, both preparing and serving large quantities of food, during the latter half of the Late Preclassic—another reason this structure was chosen for further excavations.

From 19.B2 the vast majority of ceramics dated to the Late Preclassic (50 of 76 identifiable sherds or 65.79%). These include Chancenote, Sierra Rojo Holuela, and Xanaba Rojo. One sherd from a Sierra Rojo Holuela cajete was a basal flange, an attribute that is associated with the Early Classic. There are two notable observations about the Late Preclassic sherds from 19.B2: (1) 45 of the 50 sherds are from ollas (the remaining five are from cajetes) and (2) three sherds are classified as Costa oriental because they have the pinkish paste characteristic of wares from this part of the Peninsula, and one sherd of Xanaba was classified Pasta Rosa at the variety level because of a similar paste color. We also found an eroded Early Classic sherd, 13 Middle Classic sherds (Arena, Oxil, Elote Estriado), and 12 Late Classic sherds (all Ich Canziho).

In total, 77 sherds were collected from 19.C1 and 28 were too eroded to identify. One sherd was an unidentifiable gris delgado inciso vaso that probably dated to the Late Classic. The ceramics found from this unit are different than all of the units because the majority of the identifiable sherds (31 of 48; 64.58%) date to the Late Classic as opposed to the Late Preclassic. Indeed only seven sherds dated to the Late Preclassic (Huachinango, Chancenote, and Xanaba) and 10 dated to the later part of the Early Classic (Maxcanu Bayo Temprano, Hulul Estriado, Oxil). From the Late Classic, we found the usual Muna, Teabo, and Ich Canziho; however, we also found a sherd from a Chablekal vase. Only one other sherd from the group Chablekal was recovered from a residential platform (Str. 332), while 22 were collected from the palace (Str. 92). The presence of this ceramic type indicates this household had access finewares from as far away as Tabasco or Veracruz. Furthermore, the vase form is associated with elite cacao consumption as a method to galvinze alliances and reciprocity netwowrks during the Late Classic (LeCount 1999, 2001).

Together, the data recovered from Str. 239 indicates not only the possibility of Terminal Preclassic feasting, but it also exhibits one of the highest qualities of life for a household at Ucanha. Interestingly, the data also show this household was resilient, with clear occupations during the prosperous Late Preclassic, during the Early Classic in the midst of Ucanha's downturn, and during the Late Classic when Ucanha was resurgent.

Op. 20/Str. 332

Structure 332 (Op. 20) measured 22 m by 22 m with a height of roughly 1.8 m, giving it a volume of 871.2 cubic meters, one of the highest for a structure test pitted. It is located 288 m to the north of the Central Group. Test pits—four in total—were placed on all sides except for the east (Figure 5.30). This platform has megaliths; however, they are not evenly distributed. The southwest and northeast corners have the best cut megaliths with nice rounded "pillow-shaped" corners. Additionally, the south side has relatively nice megaliths, and, while the west side does have some megaliths, they are not as nice as those on the south. There is also a vertical entrance cave roughly 10 m south of the platform that would hold water, at least during the rainy season. Given what we know about caves, this was likely an important ecological and ritual resource for members of this household and nearby residences.

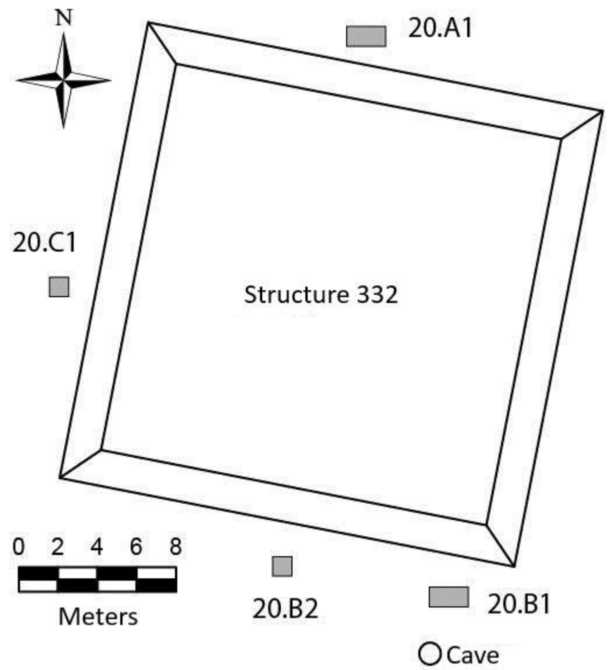

Figure 5.30. Map of Op 20 showing location of test pits around Str. 332.

Overall, Structure 332 appears to have been occupied from the Late Preclassic through the Late Classic. The percentages of ceramics from the Late Preclassic, late Early Classic, and Late Classic are relatively similar (34.66%, 25.93%, and 36.16%, respectively). While the Early Classic is only 3.16% it is likely this structure was occupied during this time since certain types present (e.g., Shangurro and Huachinango) also extend into the Early Classic but were first used during the Late Preclassic. The presence of Hubila estriado supports an Early Classic occupation; however, no Early Classic polychromes were recovered, suggesting a bit of a decrease in household wealth during this period. Only this operation and operations 19 and 24 had a late Early Classic assemblage greater than 17%--half of the platforms test pitted had <10% of ceramics from this period—and this operation is the second highest with over 25%. Additionally, the average density of ceramics for this operation was 2801.82 g/m2, which is one of the highest for households at Ucanha (cf. average ceramic density of 1609.7 g/m^3). This elevated number is likely the result of continuous, intense occupation from the Late Preclassic through the Late Classic. While the majority of other structures appear to be abandoned during the latter part of the Early Classic, this structure remains occupied and the household resilient. The location next to a controllable water source might be one reason for this household's longevity.

There is also a shift in vessel decoration and form at Structure 332 from the Late Preclassic to the Early Classic. During the Late Preclassic this household has access to four different types of decorative bichrome wares (13.67% of Late Preclassic sherds) that are more visually ostentatious: Carolina, Dzilam, Hauchinango, and Shangurro. Other ceramics from the Terminal Preclassic include Tipikal, Unto, Sierra Laguna Verde, and fine-paste Xanaba. Furthermore, the ratio of storage vessels to serving vessels is 1.421:1. However, by the late Early Classic, the household does not have access to bichromes or polychromes, and the ratio of storage vessels to serving vessels balloons to 24.5:1. This shift indicates during the late Early Classic the household was more involved with food preparation and/or storage or that the importance of water storage in ollas was a critical component of the domestic economy.

Ceramics indicate this household was also occupied intensively during the Late Classic. For example, in 20.A1-2, the density of ceramics is 6496.88 g/m3, one of the highest concentrations for households at Ucanha. This high density is the product of two ceramic concentrations of large sherds. A concentration of Ich Canziho was found along the middle of the southern wall of the unit at the soil change—the beginning of level three—and included several large sherds. Another concentration of Ich Canziho was found roughly 25 cm northwest at the start of the soil change. This level mostly dates to the Late Classic (40 of the 62 identifiable sherds) and the vast majority (32/40) are of Ich Canziho. Given the size of sherds in this concentration it is likely a vessel (or at least part) was intentionally broken and deposited here. We additionally recovered 12 g of marine shell. Serving ware sherds from this context and time period include a Kinich cuenco, Muna cajetes, and Teabo. Also, sherds from a fine-gray Chablekal bowl with round impressions were also found at this operation.

Op. 22/Str. 19

Structure 19, located 425 m south of the Central group, was a rectangular platform with a volume of 540.78 cubic meters and surface area of 245.81 square meters that was disturbed by a modern dirt road that intersected its eastern half (Figure 5.31).

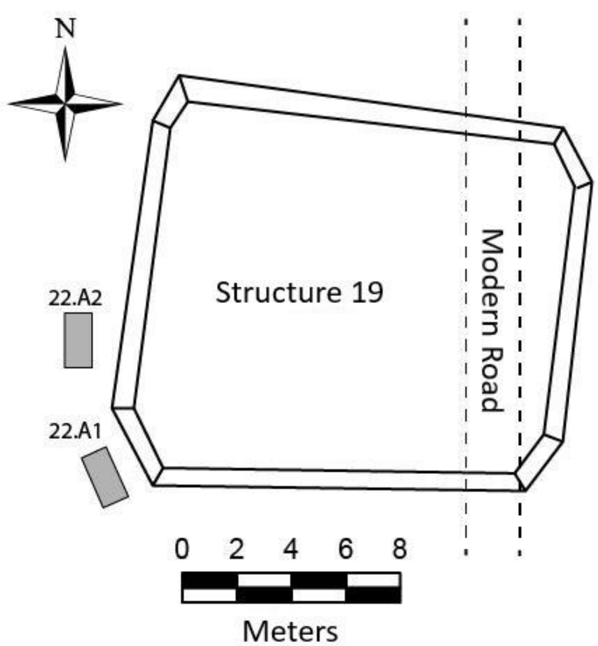

Figure 5.31. Map of Op 22 showing location of test pits around Str. 19.

Ceramic frequencies indicate Structure 19 was probably constructed during latter part of the Early Classic (18.80%) and most intensively occupied during the Late Classic (76.92%). The presence of Kinich naranja and a possible Ticul indicate this household had access to several different varieties of fineware ceramics during the Late Classic. Ceramics were present from the Middle Preclassic, Late Preclassic, and the Postclassic, yet all of the frequencies were less than 1.8% or two sherds; these low numbers suggest the structure was not occupied during these times. However, if it was occupied, it was for a brief period or by a rather impoverished household. Finally, this is one of only three domestic platforms with Postclassic ceramics, yet only one had greater than 1.8% of the pottery dating to this period.

Op. 23/ Str. 29

Operation 23 includes Structure 29, a platform that measures roughly 15 m by 16 m with a volume of 420.41 m^3, that was located 425 m to the southwest of the Central Group. The western edge of this platform is truncated by a road and bedrock is exposed on the southwest corner (Figure 5.32). There are some megalithic stones present in the retaining wall of the road.

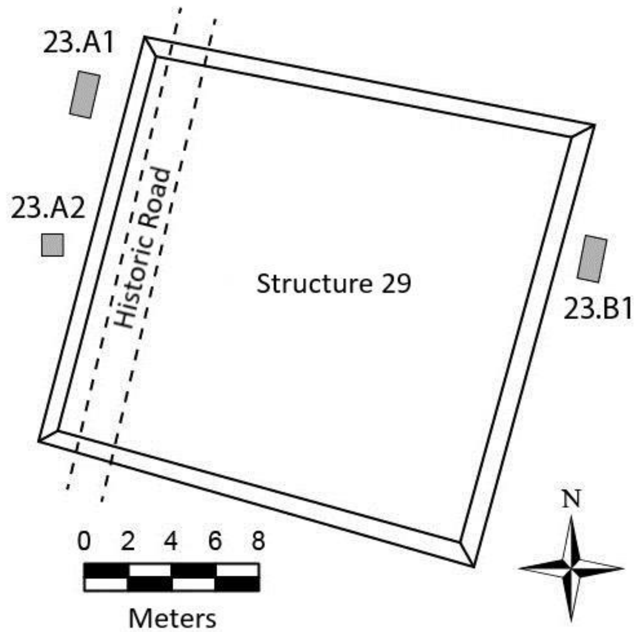

Figure 5.32. Map of Op 23 showing location of test pits around Str. 29.

Only 22 identifiable sherds were recovered from this operation. Overall, ceramics indicate Str. 29 was most intensively occupied during the Late Classic—with 63.64% of identified sherds dating to this period—followed by the late Early Classic at 31.82%. Few residential platforms (n = 4) had access to Sacalum ceramics during the Late Classic, so the presence of this ceramic type is puzzling given the overall lack of other indications of household wealth. Unlike the vast majority of platforms tested, this area had minimal, if any, occupation during the Late Preclassic with only one sherd being recovered. It does not appear that the presence of megalithic stones associated with the road is part of the initial construction of the platform and it was likely brought from elsewhere in modern times.

Op. 24/Str. 546

Operation 24 includes Structure 546, a platform that measures roughly 17 m on the north and south, 11 m on the east and west, and 1 m tall with a volume of only 187 cubic meters. A modern albarrada, or stone wall, flanks the eastern and southern edges of the platform. While no megalithic stones are in place, part of the albarrada does contain some larger stones that were possibly recycled.

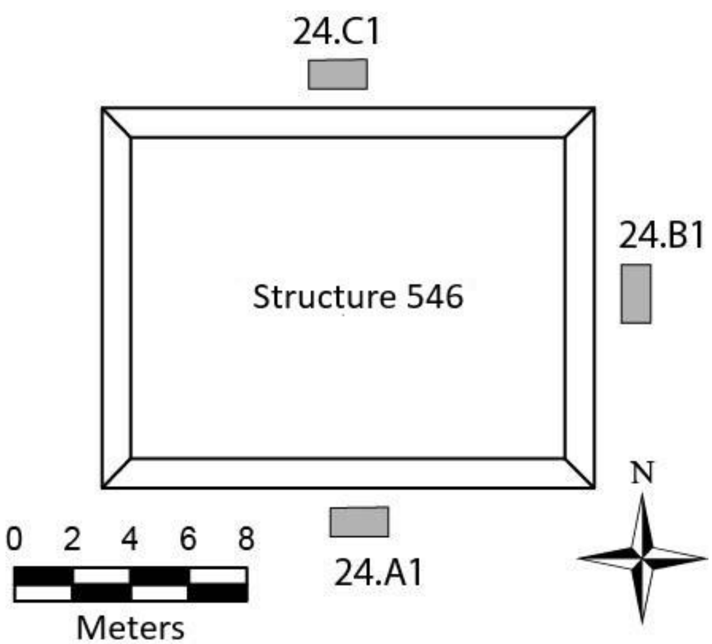

Figure 5.33. Map of Op 24 showing location of test pits around Str. 546.

Of the 161 identifiable sherds encountered from three test pits (Figure 5.33), 50.92% date to the late Early Classic, 34.97% to the Late Preclassic, 9.20% to the Late Classic, and 4.91% to the early part of the Early Classic. From the Late Preclassic, only one bichrome (Dzilam Verde) was present as well as Tipikal, Sierra Flaky, Xanaba, and Chancenote. Residents of this household also had access to two different types of Early

Classic polychromes, Tituc and Timucuy. This is one of only two non-monumental test pitting operation where Timucuy was found.

Structure 546 yielded some patterns that were unique to the households investigated at Ucanha. First, compared to other operations investigated, Op.24 was the only non-monumental context where obsidian was found. We recovered two prismatic blades fragments. Test pits around Str. N141 at the hinterland site of Yaxche only yielded a few obsidian blades but broad excavations produced 18 pieces of obsidian—the most of any operation to date—including blades and exhausted micro-cores. Like Str. 546, N141 also overwhelmingly dated to the latter part of the Early Classic (1337 of 1782 identifiable sherds or 75.03%). Str. N141 also yielded shell ornaments and blanks suggesting the presence of a domestic economy and some degree of specialization; Str. 546, however, lacked evidence of shell crafting. Since none of the other households had access to obsidian, this material was seemingly not an integral component of the toolkit necessary to meet daily needs. The small quantity and size of the obsidian recovered at Ucanha is characteristic of down-the-line trading and argues against the presence of markets or redistribution for these artifacts (Hirth 1998; Renfrew 1975). Second, it was the only residential platform that had the highest percentage of ceramics (50.92%) from the late Early Classic. While the majority of the households witness an abandonment or decline, this household thrives, possibly because of economic activities that required obsidian blades helped supplement the household and allowed them to survive this tumultuous period at Ucanha. Only future excavations can tell us more about the presence of these obsidian artifacts and the domestic economy of Str. 546. Nevertheless, it appears this household was established during the Late Preclassic and had a relative high quality of life during this period and even more so during the subsequent Early Classic, a time which is a nadir for the rest of Ucanha.

Op. 25/Str. 400

Operation 25 (Figure 5.34) includes Structure 400 which measures 15 x 15 m with a height of 1.3 m and a volume of 292.5 m3. This structure is located 730 m to the east of the Central Group in a pasture and has a modern albarrada running between 7° and 14° east of north over the structure, so there is some modern disturbance. On the east side of the structure several megalithic stones, roughly 60 cm in length, continue all the way to the southeastern corner. It is possible more megalithic stones existed but were removed in order to construct the modern albarrada. Exposed bedrock surrounded the structure.

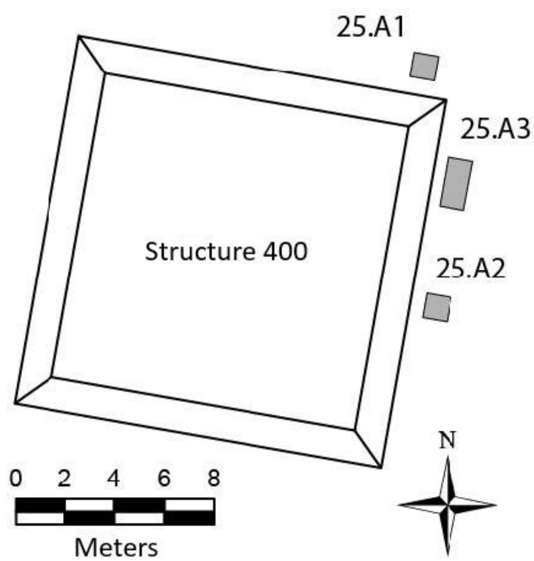

Figure 5.34. Map of Op 25 showing location of test pits around Str. 400.

Only three sherds were recovered from Op. 25, and they were all from an Early Classic form of a Maxcanu jar. The presence of megalithic architecture in conjunction with the sparse ceramics found indicate this structure was not built until after integration.

Elsewhere on the project, at the site of 21 de Abril, it is argued that low amounts of ceramics at platforms that otherwise appear to be occupied year-round might indicate impoverished households used perishable containers such as gourds or baskets woven from agave to meet their culinary needs (Hutson and Davies 2015). Thus, it is likely this structure was inhabited during the Early Classic, however, compared to other households at Ucanha, this one would have likely been relatively poor, at least in terms of access to ceramic goods. This operation again highlights the trend of decreasing household quality of life by the first few centuries into the Early Classic. Nevertheless, the labor investments as measured by architecture volume was relatively high.

Op. 26/Str. 459

Operation 26 investigated Structure 459, a platform that measures 20 m by 19 m and stands 1.3 m high (494 m3) and is located 865 m to the south-southeast of the Central Group (Figure 5.35). A modern road runs parallel to its east. There are large stones (40 cm x 40 cm and 20 cm thick) along the north and northwest sides and there is a nice megalithic stone (70 cm long and 30 cm thick) in the southeast corner of the basal platform. On top of the platform in the south/southeast area, there is a megalithic rectangular superstructure that was built with one course of stones and measuring 5 m x 5m on the sides and 40 cm tall. Also at roughly the middle of the southern side of the platform there are two complete metates that are side by side (Figure 5.36). The opening of the larger of the two metates measures 65 cm long by 28 cm wide and is 16 cm deep; the opening of the small metate measures 47 cm long by 27 cm wide and is 20 cm deep. Shovel tests around the entire structure were nearly all positive and the majority contained fragments of plaster floor, suggesting, like Ops. 9 and 10, that either the open area around the structure was plastered or that the structure itself was covered in a layer of stucco. Of final note, roughly in the middle of the eastern side of the structure there appears to be a looter's trench or an area that was mined for limestone blocks.

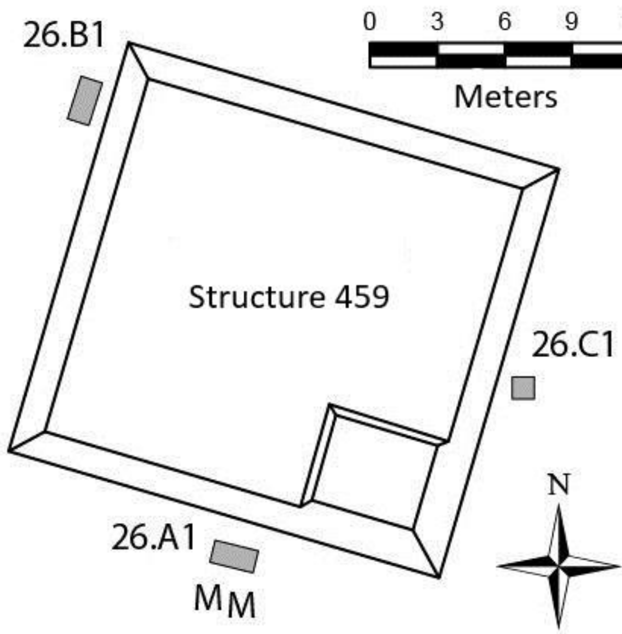

Figure 5.35. Map of Op 26 showing location of test pits around Str. 459.

Figure 5.36. Close up picture of metates located along the southern part of Str. 459.

Unit 26.A1 was placed only 40 cm to the north of the metates and was excavated in two levels by 20 cm arbitrary levels. This unit had, by far, the highest ceramic density of the entire operation. Level 1 had a ceramic density of 2415.00 g/m3, and the ceramic density of Level 2 increased to 3217.39 g/m3, nearly twice that of the site average. Of the 82 identifiable sherds found, 67 are from the Late Preclassic (81.70%). Ceramic sherds from the Early Classic (n = 1), Middle Classic (n = 11), and the Postclassic (n = 3) were also recovered, albeit in low quantities. As seen in many other operations, there is great ceramic diversity within and across types during the Late/Terminal Preclassic. In this context we have seven different ceramic types, including two bichromes (Dzilam and Shangurro). Yet there is also diversity within types: within Shangurro there is the normal variety and an olla variety called “Estrias interiores” or striated interior. This experimental form of Shangurro likely emerged in the face of the growing social distinction seen during the end of the Preclassic period. As Fry (2003:89) notes, “the presence of limited water sources in northern Yucatan made the water source a larger-scale public domain and would have encouraged the use of higher-quality vessels as status or wealth markers.” Xanaba we have the normal type and type “Zona punzada”; and finally, in Chancenote we have the normal variety but also a type called “Pasta Rosa”, which is either an import from the east coast or a local emulation of these east coast wares. These ceramic experimentations and diversities are seen as an integral component of displaying status during the widespread increasing social differentiation that is characteristic of the Terminal Preclassic/Protoclassic. The presence of a Dzidzibachi polychrome from the Early Classic might chronologically overlap with some of these “Protoclassic” experimentations with materializing wealth and status. There was only one other Dzidzibachi sherd at Ucanha and it was from Structure 239, one of the highest status households at Ucanha. Additionally, a large conch columella (45 g) was recovered from Level 2. Finally, it is interesting to note that many of the ceramics recovered from this context were rather large sherds, suggesting they were deposited rather quickly. Larger, less worn sherds are associated with feasting episodes in the archaeological record (McAnany 2010; Spielmann 2002) or the intentional destruction of pots as offerings. It is also possible that these larger sherds simply represent refuse.

The other test units had lower ceramic densities but similar trends. Collectively, 85.88% (n = 152) of the 177 identifiable sherds dated to the Late Preclassic. This includes five different varieties of bichromes (Dzilam, Hauchinango, Carolina, and two iterations of Shangurro) which comprise 15.58% of all Late Preclassic sherds. There were also two sherds of a Polvero Chikin bowl and one sherd of Tipikal. During the Late Preclassic, this household had a relatively high frequency of storage vessels compared to serving vessels (3.72:1); furthermore, 65.13% of all ceramics from the Late Preclassic were Chancenote ollas. Only 10.17% (n = 18) of the sherds date to the Early Classic, including only two sherds from polychromes (Tituc and Dzidzibachi) as well as Arena, an early form of Maxcanu, and two types of Oxil (Elote estriado impreso and Oxil sin engobe). Only five sherds from the Late Classic and only three sherds from the Postclassic, one of which was from a Chen Mul incensario, were found.

The presence of megalithic architecture, plaster flooring, a superstructure, and a diversity of ceramics from the Late Preclassic all indicate this was a high-status household during this time. While the average ceramic diversity of fancy bichromes was 2.625 different varieties, this household had five. These ceramics were not discarded at random as the highest densities were near the two metates. Given the size of individual sherds, this high density, and the diversity of both serving and storage wares it is possibly this household was involved in food production for other households during the Terminal Preclassic period. The presence of plaster found in shovel tests around the structure indicate this structure and/or the area around was covered in plaster in antiquity, which would have added to its architectural investment and household wealth. The presence of side-by-side metates also suggest the need for food preparation beyond the level of the household. However, after the Terminal Preclassic this structure is either abandoned or the inhabitants living there became significantly impoverished. This pattern of relatively wealth Late Preclassic households either disintegrating or losing their resources by AD 400 is a common pattern that may attest to larger sociopolitical problems at Ucanha.

Op. 27/Str. 381

Operation 27 includes Structure 381 which is a broad platform that measures 23 x 23 m with a height of 1.8 m and a volume of 952.2 m^3, making it one of the largest residential architectural compounds investigated. This megalithic platform is located near the northern boundary of Ucanha (Figure 5.20) some 835 m north of the Central Group. It was originally hypothesized that this structure might have been an integrative feature, possibly serving as a broker, that would have brought people from the hinterlands to Ucanha (Ashmore et al. 2004; Yaeger and Robin 2004). Given the relatively large labor investment of this platform I expected to find a sizable ceramic sample and other indicators of an elevated quality of life; however, only one of 18 shovel tests produced any artifacts (Figure 5.37) suggesting this structure was not a locus of feasting or other activities that would have brought in people from the hinterlands.

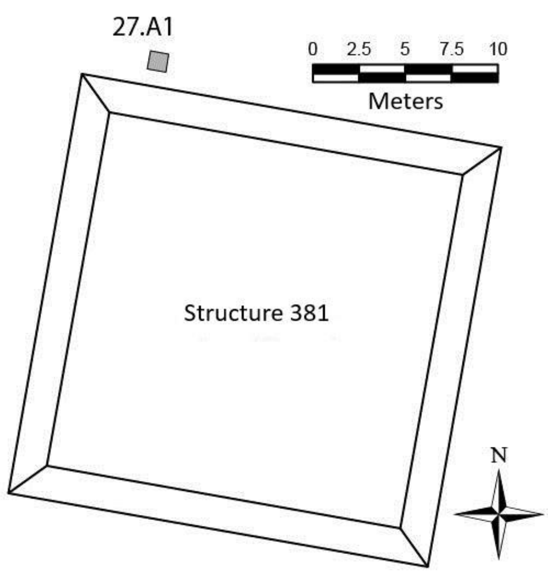

Figure 5.37. Map of Op 27 showing location of test pits around Str. 381.

In total 26 sherds were recovered and only seven were identifiable. Of these, two were Ich Canziho and the other five were from the Late Preclassic (Chancenote, Shangurro, and Xanaba Rojo). This sample, albeit quite small, coupled with the presence of megalithic architecture indicates this platform was mostly constructed and occupied during the Late Preclassic. This platform is interesting because here increased labor input does not appear to correlate with material wealth in the form of portable goods. The massive volume of this platform would have required significant labor, likely beyond that of the household, yet the social capabilities of this household to procure a variety of portable goods from external networks is nearly absent.

Chronological Trends

Ceramics recovered from 13 architectural compounds investigated in 2014 had a clear occupation boom during the Late Preclassic and to lesser degree during the Late Classic. A frequency diagram shows all but two platforms—Op. 14 and 25—were most intensively occupied during the Late Preclassic (Figure 5.38). The deflated numbers from Op. 25 are possibly the result of sampling bias, only four potsherds were found; however, it is also possible this platform was only occupied at the end of the Early Classic. Op. 27 only yielded seven chronologically diagnostic potsherds, so its trend might be biased as well. If it is assumed a minimum of ten sherds represents an occupation, then the percentage of these structures were occupied as seen in Table 5.1. As will be discussed below, surface collections show a significantly higher number of structures occupied during the Late Classic. Nevertheless, chronological trends from test pits show a population apex during the Late Preclassic, a decline during the Early Classic and a rebound by the beginning of the Late Classic.

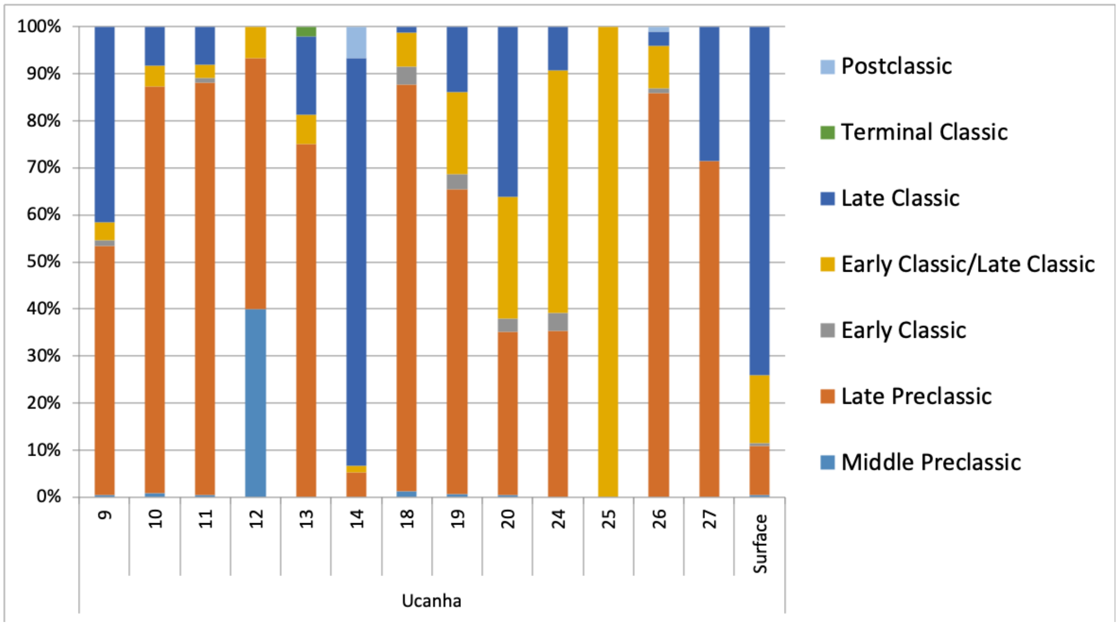

Figure 5.38. Bar graph of percentages of different time periods from platforms test pitted and surface collected.

Table 5.1. Percentages of sherd dating to given period and estimates of percentages of structures occupied during these time periods

Time Period	**% of Structures Occupied**	**% of Sherds Dating to Time Period**
Middle Preclassic	7.69%	0.94%
Late Preclassic	88.9%	59.07%
Early Classic	15.38%	1.92%
Early to Late Classic	38.46%	14.45%
Late Classic	53.85%	23.33
Terminal Classic	0%	0.04%
Postclassic	0%	0.26%

Household Provisioning during the Late Preclassic

Studies of household provisioning and domestic economies indicate households were not independent but rather were intertwined in a series of relations between various actors of differing sociopolitical standing (Lohse 2013; Scarborough and Valdez 2009; Sheets 2000). Households are linked together through economic, political, and ecological relations and can influence the broader political success of a community; as such, inter-household inequalities, which can accompany broader political-economic changes, can be a point of tension that threaten community success (Brumfiel 1994; Joyce 2008). Moreover, the household is one the most salient components of identity and successful integration into the larger community: satisfactory levels of wellbeing must be sustained for broader sociopolitical prosperity. Test pitting from Ucanha provided insights into chronology and how ceramic provisioning among households was variable and changed over time. Ratios of ollas or jars to serving vessels were also calculated since wealthier households tend to have low olla to service vessel ratios (Fry 2003; Smith 1987; Turkon 2004). One way to assess social differentiation is through the distribution of decorated ceramics, variations in ceramic assemblage diversity, and frequencies of these aesthetically pleasing, more labor-intensive ceramics (Turkon 2004:234). Distributions and frequencies can be calculated through Gini scores (see below). Using these parameters to identify prestige as household wealth across time at Ucanha argues there were differences between household QOL during the Late Preclassic; however, these differences became more pronounced into the Early Classic.

Building from this discussion, I turn to the QOL of households at Ucanha and how these changed over time, likely as the result of political-economic negotiations vis-à-vis increasing social differentiation. Since other artifact classes such as obsidian and jade are, to date, largely absent from households at Ucanha, I use ceramic assemblages and architectural elaborations as proxies for QOL. For example, greater access to visually ostentatious serving wares, such as painted pottery, can indicate an elevated wealth and QOL because these households have the material ability to host more rituals, such as extra-household feasts, and these would require the ability to garner substantial resources such as foodstuffs, labor to prepare and cook meals, and costly ceramic wares (Fry 2003; Smith 1987:313). However, attribute analysis, such as rim diameter, in conjunction with faunal analysis is needed to bolster claims of feasting, a topic which will be discussed in subsequent chapters. Households experience their highest QOL during the Late Preclassic since, following Smith (2015:4), "higher levels of artifact diversity point to a higher quality life". During this period all but one of the 15 households had access to at least one type of these of bichrome and polychrome ceramics. Indeed, the mean number of different "fancy" bi/polychrome ceramic types during the Late Preclassic is 2.47 ($s = \pm 2.054$) per household; however, when removing architectural compounds that had less than 5% of the ceramic assemblage dating to the Late Prelassic, the mean number of "fancy" ceramics increases to 3.27 ($s = \pm 2.054$) per household. These "fancy" types include east coast bichromes (Huachinango, Dzilam Verde, and Carolina); cream slipped wares likely from the Peten (Flor); numerous Xanaba types with surface treatments and/or zoned bichrome slips (Caucel, Dzalpach, Kana, Chuchen, and Pixoy); similar types within Sierra (Laguna Verde and Altamira); and red-to-yellow-to-orange slips wares such as Shangurro and Iberia Ixcanrio. By the Early Classic, only seven of the 16 households have access to "fancy" polychrome ceramics giving a diversity average of 0.688 per household. Furthermore, households during the Late Preclassic had a greater quantity of bichrome and polychrome ceramics compared to those during the Early Classic. From tests pits, 302 sherds from fancy ceramics date to the Late Preclassic as opposed to only 49 fancy ceramic sherds from the Early Classic. While higher diversity counts in the Late Preclassic, many of which date to the end of this period, are probably the result of ceramic heterogenization in the Northern Lowlands in general (Glover and

Stanton 2010), it is clear that by the first couple of centuries into the Early Classic the allocation of “fancy” ceramics is more circumscribed than previously. Some authors (Glover and Stanton 2010; Reese-Taylor and Walker 2002) claim the narrower distribution of Early Classic polychromes is the result of elite gift giving economic transactions that tried to solidify alliances, whereas distribution patterns of Late Preclassic fancy wares were less directly controlled by elite institutions. However, the presence of Protoclassic style ceramic wares were only found in monumental contexts and households with the highest QOL, indicating these gifting practices probably date to the Terminal Preclassic at Ucanha.

As discussed in Chapter 2, Gini coefficients have been utilized to quantify the degree of distribution of a given unit where a score of 0 indicates an equal distribution and 1 indicates a completely unequal distribution. These distribution patterns have been used as a quantification of household quality of life with regard to wealth, as proximately measured by architectural volume (Feinman et al. 2018; Smith 2015). Since the capabilities component of QOL is quantified by the diversity of possessions in the stylistic realm—distinct number of ceramic wares—and access to external social networks—exchange systems (i.e., foreign goods) and style networks (i.e., local goods that emulate foreign styles)—I argue that calculating Gini coefficients for ceramic distribution can help quantify QOL across time.

In order to analyze ceramic distribution from the Late Preclassic and to the Early Classic, I compiled the number of distinct bichrome varieties as well as the total number of distinct varieties for the Late Preclassic as well as the number of distinct polychrome varieties for the Early Classic (Table 5.2). Households with greater number of bichrome varieties (# bichrome var.) and overall greater number of ceramic varieties (# total var.) have greater QOL since diversity of possessions equates to wealth and stylistic breadth equates to capabilities as social networks. A lower ratio of storage/preparation to serving vessels is also another indicator of household wealth since wealthier households tend to throw more feasts (Fry 2003; Hirth 1993b; Smith 1987); therefore households with lower ratios of this variable (storage/preparation:serving LPC), should have greater wealth. Some structures (Op. 14, 22, 23, and 25) were ephemerally occupied during the Late Preclassic (<5% of the ceramics), which may skew Gini coefficients. Additionally, surface collection operations (see below) were not included because ceramics recovered overwhelmingly dated to the Late Classic, a trend that is at odds with ceramics recovered from testing pitting operations. Bichrome varieties during the Late Preclassic include all different varieties of Dzilam, Huachinango, Carolina, Shangurro, and Iberia (eight total), while the Early Classic polychrome varieties include Dzidzibachi, Tituc, Timucuy, Aguila, and Dos Arroyos (five total). The total of number of distinct varieties includes bichromes in addition to all other ceramic varieties, a number that is likely inflated by the numerous varieties of redwares (i.e., Xanaba and Sierra) present during the latter part of the Late Preclassic. During the Late Preclassic the access of bichrome varieties was relatively equal with a Gini coefficient of 0.0960. The distribution of counts (i.e., sherds) was a bit less equal at 0.437, nevertheless, nearly every architectural group occupied during the Late Preclassic had access to fancy bichromes. This trend of near-universe access, however, is almost completely inverted with the distribution of Early Classic polychromes, which a Gini coefficient of 0.851, a score that indicates a highly unequal distribution. However, the calculation of the total number of distinct Late Preclassic varieties is less equal than the distribution of bichromes with a Gini coefficient of 0.552. Therefore, during the Late Preclassic the overall prosperity of Ucanha, as measure by the sum of household QOL, appears relatively high. At the household level capabilities as manifested by ceramic diversity appears relatively equal with regard to bichromes; however, the overall access to different ceramic varieties and the style networks represented therein suggest that materializations of social distinction and variations of QOL were present during the Late Preclassic. By the Early Classic, ceramic materializations of social distinctions become pronounced as the distribution of fine ceramics becomes more circumscribed to fewer households.

Broader regional comparisons of fancy bichrome distributions from households at the regional center (Ucí), another secondary center small than Ucanha located on the intersite causeway (Kancab), and a hinterland areas without monumental architecture (Yaxche), suggest similar site-wide accessibility. From a total of 30 contexts, all but two structures occupied during the Late Preclassic lacked access to bichromes and correlations between construction volume and percentage of fancy pottery were not statistically significant (Hutson 2019/in press). This analyses by Hutson coupled with Gini scores of fancy ceramic distribution underscore the capability of nearly all households to procure these types of ceramics. Furthermore, this pattern fulfills Hirth's distribution approach towards market systems. This is not to say Ucanha had a complete market economy, although linguistic and economic evidence for market exchange does exist by the Late Preclassic in the Maya area (Chavarría 2011; Dreiss and Brown 1989; Tokovinine and Beliaev 2013:172). Rather, the integrative roadways and Central Plaza at Ucanha in conjunction with ceramic distributions suggest the presence of market exchange through pilgrimage-fairs as a centripetal force that would have drawn people to Ucanha. This ability to provision the household as well as the social interactions afforded by these market-pilgrimage-fairs would have greatly added to one's overall wealth, but perhaps more importantly, would have augmented the social capacity of the household, thereby improving overall QOL. This idea will be revisited in more detail in chapter eight.

Table 5.2. Comparisons of households across the Late Preclassic and Early Classic highlighting access to fancy ceramics.

Op. #	Str. #	% sherds LPC	% sherds EC	% sherds LC	# bicrome var.	% of bicromes	# total var.	ollas:serving LPC	EC Polychromes
9	68	53.11	4.98	41.49	4	11.72	12	5.63:1	Aquila
10	115	86.96	4.38	7.83	3	9.09	10	2.3:1	none
11	65	87.75	3.82	8.03	8	33.41	17	2.5:1	Aguila, Tituc
12	31a	53.33	6.67	0	1	21.43	2	3.67:1	none
13	132	75	6.25	16.67	3	20.2	8	1.66:1	none
14	518	5.71	1.35	91.43	1	66.67	2	0:1 (only bowls)	none
18	242	85	8.75	4.38	3	5.3	11	2.76:1	none
19	239	63.86	19.56	15.03	3	10.32	13	3.49:1	Dzidzibachi, Tituc, Timucuy, Aguila, Dos Arroyos
20	332	34.66	28.68	36.16	4	12.23	14	1.42:1	none
22	19	1.71	18.8	76.92	0	0	1	one olla sherd	none
23	29	4.54	31.82	63.64	0	0	1	one olla sherd	none
24	546	34.97	55.83	9.2	1	5.26	5	3.75:1	Tituc, Timucuy
25	400	0	100	0	0	0	0	only 3 sherds found	none
26	459	85.39	10.11	2.81	5	15.58	11	3.72:1	Dzidzibachi, Tituc
27	381	100	0	0	1	33.33	3	2:1	none

Nevertheless, the lack of overt material referents to household wealth also added to community cohesion during, and directly after, the process of physical integration. None of the residential platforms—with exception of the palace's Str. 92c-subII that had a stone wall covered in stucco—had walled masonry superstructures a sign of social stratification in other Northern Lowland sites (Carmean 1991). Also no households had access to nonlocal luxury items, such as jade, spondylus or pyrite (common "prestige goods" of the Preclassic period elsewhere in the Maya world (Freidel and Suhler 1999; Reese-Taylor and Walker 2002; Schele and Freidel 1990). Only one test pit operation at residential compounds (Op. 24) recovered obsidian, where a measly two pieces were found.

While this might imply a lower quality of life compared to other sites in the Maya world, it is important to remember inequality is a relational construct. As Marx ([1899] 2000:30) argues: "A house may be large or small; as long as neighboring houses are likewise small, it satisfies all social requirements for a residence. But let there arise next to the little house a palace, and that little house shrinks into a hut." At Chan, Robin et al. (2012) have argued households with quantitatively different yet qualitatively similar assemblages were relatively heterarchical insofar as displays of material wealth were relatively equal. A similar lack of "elite" goods also noted at Komchen lead Ringle and Andrews (1988:193) to view social distinction as "within the generally egalitarian framework of a peasant community" during the Late Preclassic. However, social distinctions were present at Ucanha across households during the Late Preclassic, most notably through labor mobilization via construction inputs, hosting feasts (see chapter 7), and distributions of certain types of fancy Late Preclassic ceramics. Nevertheless, the heterarchical nature of social distinction and household QOL likely would have been critical in retaining a growing population at Ucanha given a lack of overt materializations, such as clear control of exotic trade goods.

Architecture as Social Distinction

In Mesoamerica architectural investment has been used as a proxy for a household's ability to mobilize labor and resources, and, as such, an indicator for wealth and social distinction (Abrams 1994; Carmean 1991; Feinman et al. 2018; Hirth 1993b; Hutson 2010; Kowalewski et al. 1992b; Smith 1987). More specifically, recent investigations have calculated Gini coefficients as a method to quantify these energetic differences (Feinman et al. 2018; Hutson 2016a; Smith 2015). While calculating Gini coefficients would ideally come from extensive excavations that can identify different construction phases, all three extensive excavations of platforms indicate the basal platform was in place by the end of the Preclassic. When calculating the Gini coefficients for architectural volume for all 15 platforms that were test pitted (Table 5.3), the distribution of this variable is 0.427. However, four platforms lacked megalithic architecture and had Late Preclassic ceramics percentages of <5% (Op. 14, 22, 23, and 25), so they were excluded, and a Gini score was calculated for the remaining 11 platforms, all which had clear Late Preclassic megalithic architecture and/or a majority of ceramics from the Late Preclassic or Early Classic. This new Gini score was for volume was 0.480. Since larger living spaces also positively correlates with wealth, Gini scores of for surface area was also calculated for these 11 platforms (0.38). To put these numbers in context, intensive agriculturalists in non-urban settlements had a mean Gini score of 0.57 for architectural volume (ranging from 0.45 – 0.71)(Smith et al. 2010).

Archaeological examples from Mesoamerica produce similar scores. Residence size at Classic Period El Palmillo in Oaxaca was 0.43 and eight residences from three Formative Period sites in Oaxaca had a Gini of 0.25 (Feinman et al. 2018). In the Maya area, Gini scores for architectural volume and surface area ranged from around 0.40 (Postclassic Mayapan, Late Classic Palenque, Late Classic Dzibilichaltun) to above 0.60 (Late Classic Caracol, Early Classic Chunchucmil, Late Classic Sayil) (Chase 2017:Table 2). Gini scores for living surface varied greatly from around 0.35 (Caracol, Mayapan, and Dzibichaltun) to high of 0.71 at Sayil (Chase 2017:Table 2). With a Gini score of 0.39 for surface area, the architectural variability of Dzibilichaltun is most similar to the scores from Ucanha. This is not to say that social inequality at Dzibilichaltun and Ucanha was similar; yet, it does show there was considerable variation between access to labor and architectural resources during the Late Preclassic at Ucanha.

Table 5.3. Surface area and volume of platforms at Ucanha dating to the Late Preclassic along with distance from center of site and presence of other features such as megaliths, metates, and stucco.

Op. #	Str. #	Volume (m3)	Surface Area (m2)	Distance from Center (m)	Megalithic	Metates	Stucco
9	68	490.65	288.62	263.14	yes	0	yes
10	115	309.44	171.91	179.7		2	yes
11	65	1000	525.31	260.99	yes	0	yes
12	31a	176.19	195.77	595.11	no	0	no
13	132	376.88	376.88	586.07	yes	0	no
14	518	196	196	672.59	no	0	no
18	242	309.4	182	310.56	yes	2	no
19	239	771.75	441	415.69	yes	5	yes
20	332	720	400	288.22	yes	0	no
22	19	540.78	245.81	424.55	no	0	no
23	29	504.49	420.41	427.87	no	0	no
24	546	187	288.25	435.96			no
25	400	292.5	225	728.22	yes	0	no
26	459	494	380	864.79	yes	2	yes
27	381	952.2	529	835.68	yes	0	no

Surface Collection

In addition to test pitting, we opportunistically collected ceramics from the surface of 12 different structures at Ucanha. More systematic surface collecting programs have been employed in areas with high surface visibility such as Oaxaca (Blanton 1978; Hutson 2002; Levine 2011) and the Valley of Mexico (Sanders et al. 1979). However, in the majority of places in the Maya area, low surface visibility typically precludes systematic surface collections; yet, burnt milpas and/or areas dried out before the start of the rainy season provide an opportunity for collecting ceramics (Glover 2012; Robin et al. 2015; Shaw 2001). Coupled with a test pitting program, surface collections added a quick method for getting more chronological information on the occupation history of Ucanha. All surface collections were associated with architecture and were given an operation number.

Overall, surface collections from 12 different structures indicate different chronological trends than those of test pitting operations (Table 5.4). Of the identifiable sherds found in non-monumental residential platform test pits, 60.48% (n = 1726) date to the Late Preclassic and 21.76% (n = 621 date to the Late Classic. However, sherds collected from the surface completely invert these trends: 79.24% (n = 332) are from the Late Classic and only 7.40% (n = 31) are from the Late Preclassic. There are several possible explanations for this discrepancy. One is that the slatewares of the Late Classic are much more durable than the ceramics of the Late Preclassic and are able to withstand post-depositional erosion and/or trampling, thereby making them easier to identify. Given the age difference between these ceramics, sherds from the Late Preclassic on the surface would also have undergone at least three hundred years of additional exposure to post-depositional processes. We only recovered 46 sherds that were too eroded to identify, however, so even if all of these dated to the Late Preclassic, the Late Classic would still dominate the surface collection assemblage. Secondly, eight of the 12 structures from which ceramics were collected are located next to one another, about 250 m north of the palace and between 100 and 250 m east/southeast of Structure 151, the tallest pyramid at Ucanha. The close spatial proximity to one another suggests this area was possibly constructed around the same time and that these households were drawn to Ucanha during its resurgence in the Late Classic. Finally, these chronological trends may rest in the collection methods themselves. The older Late Preclassic deposits would likely be found under the surface so surface collection might inherently favor the collection of later ceramics. Furthermore, surface collections often overlook initial construction phases and obscure architectural renovations and ritual dedications and terminations (Blanton 1978:44). Only with excavations around these structures can we parse out the chronological differences seen between test pitting versus surface collections.

Table 5.4. Summary of surface collection ceramics as number of sherds and percentages for Middle Preclassic (MPC), Late Preclassic (LPC), Early Classic (EC), Middle Classic/Late Facet Early Classic (MC), Late Classic (LC), Terminal Classic (TC), unidentified (UNID), and eroded sherds.

Op.	Str.	#MPC	#LPC	#EC	#MC	#LC	#TC	#UNID	#ERODED	#TOTAL	#ID	%MPC	%LPC	%EC	%MC	%LC	%TC
28	108					13			2	15	13					100	
29	202		3		1	29		1	7	41	33		9.09		3.03	87.9	
30	204		1		5	32		4		42	38		2.63		13.2	84.2	
31	212		1		2	32			4	39	35		2.86		5.71	91.4	
32	213		1		3	25			3	32	29		3.45		10.3	86.2	
33	214		1		6	22		1	2	32	29		3.45		20.7	75.9	
34	215	1	4			25			3	33	30	3.33	13.33			83.3	
35	582			1					3	4	1			100			
36	583				7	11			2	20	18				38.9	61.1	
37	107		2		11	81	1	2	5	102	95		2.11		11.6	85.3	1.05
38	203	1	10	1	11	17		1	8	49	40	2.5	25	2.5	27.5	42.5	
39	205		8		6	44		3	7	68	58		13.8		10.3	75.9	

Conclusion

The period around Ucanha's physical integration within the larger Ucí polity was a time of considerable labor inputs into the built monumental landscape as well as a variety of material strategies that help to incorporate the growing population into the community. Roadways that converged on a Central Plaza and terminated in the cardinal directions with civic ceremonial plazas surrounded by architecture surely facilitated this process of integration through a variety of processions and activities. The spatial layout of this architecture conveyed a common metaphor of Ucanha as the center of the universe, a locus of intimate accessibility to supernatural deities that would not have been accessible in more dispersed hinterland settlements (Cowgill 2003). Ceramics recovered from beneath plaster floors associated with these areas and from domestic contexts largely date to the Late Preclassic suggesting these newly agglutinated populations likely donated their labor to these construction projects. A population increase, large-scale civic-ceremonial construction, and physical integration into a larger polity all attest to the communal prosperity of Ucanha during the end of the Preclassic period.

In turn, household data indicate this period was also marked by varying degrees of wellbeing, yet overall prosperity was high as fancy ceramics were well distributed and megalithic architecture was common. Labor inputs and the social networks instantiated in the megalithic style would have helped integrate households at a more local level, while the style's regional ubiquity would have been an intelligible material statement that would have integrated people on a more regional scale. Gini scores of architectural volume show the Late Preclassic was not completely homogenous with regard to social differentiation; labor mobilization was surely an important part of household QOL and a variable of distinction. The distribution of fancy bichromes during the Late Preclassic was quite equal, as evidenced by a low Gini score. Nevertheless, in the subsequent Early Classic there is marked shift in ceramic distribution patterns from that of widely distributed painted ceramics to that of more circumscribed access by the 4th century CE. As I will argue in Chapter 8, this is likely the result of changing economic systems from incipient markets to that of more elite-controlled redistributive mechanisms.

CHAPTER 6: UCANHA'S CENTRAL PLAZA: A SOCIAL AND PHYSICAL UNDERTAKING OF COMMUNITY (DIS)INTEGRATION

"[T]he study of plazas concerns the central issues in archaeology including the negotiation of power relations, community-making, and the constitution of political authorities…the central point is that physical interactions among people are not mere masks or outcomes of political machinations held behind the scene, but they are the political processes in which people create, negotiate, and subvert social realities."
Inomata and Tsukamoto (2014:5)

Introduction

In this chapter I begin by briefly presenting my theoretical approach to plazas. In short, I see plazas as both built physical places that mobilize labor (indicative of community prosperity) and that function to help integrate growing populations through an appeal to appeal to communal pride. I also discuss access to plazas and plazas' physical capacity to hold people. I then argue plazas are social arenas of performance, negotiation, and subjectification that simultaneously integrate populations and reinforce social differentiation. Next, I discuss the construction phases and chronology for Ucanha's Central Plaza itself and Str. 149, which forms the northern boundary of the Central Plaza and abuts the intrasite causeway that leads to Str. 151, the largest pyramid at the site. Finally, I present the methods and results of geochemical analyses of plaster floor samples from the Central Plaza.

Plazas: Places of Integration, Differentiation, and Subjectification

In the past, just as today, plazas in Mesoamerica anchor public life and provide a space for community interaction. In antiquity, they are found in a range of settlements, from urban landscapes to intermediate-sized cities to villages and likely served multiple functions from marketplaces (Dahlin 2009; Rice 2009) to backdrops for theatrical performances (Houston 2006; Houston et al. 2003; Inomata 2006a) to pilgrimage destinations (Freidel 1981) to locales of large-scale feasting (Wells 2007; Wells et al. 2007). In some cases, as is seen at Ucanha (and Kancab), plazas are located at the center of a settlement, thereby creating an axis mundi, a focal point from which all other space is partitioned and a microcosm of the creation of the universe. It is in these spaces that face-to-face interactions occur, a key component of community formation and the creation of generalized trust, both of which are believed to be critical factors in successful political institutions and settlement success (Golden and Scherer 2013; Smith 2015; Uslaner 2000).

Physicality of Plazas

The construction of plazas and their subsequent ability to function as a place of gathering are key components of the communalism of plazas. As Inomata and Tsukamoto (2014:3) note, labor investments in plaza constructions in and of itself can be monumental and should not be envisioned as secondary, either in terms of social importance or energetics, to pyramids and other buildings that typically flank plazas. Indeed, plaza construction volume during the Late Preclassic (86,100 m^3) at Ceibal was greater than the volume of all pyramids constructed throughout time (73,900 m^3) (Inomata 2014:Table 1.1). While plaza labor investments at Ucanha were not to that scale (17,251 m^3 for all pyramids compared to roughly 3,500 m^3 for Central Plaza fill laid down during the Preclassic), collective construction projects index community prosperity (Smith 2015:7-8). Furthermore, civic-ceremonial construction at this time across the Northern Lowlands was widespread and likely the result of emerging elites trying to "recruit and retain migrants " (Bey 2006:29), leading many to argue that construction projects during this time were a source of communal pride and a materialization of collective ideology (Glover and Stanton 2010; Ringle 1999; Ringle et al. 2014; see also Hutson 2002; Pauketat 2000).

The physicality of plazas also concerns capacity and access. The scale of capacity—that is the ability to held masses of people—is important to define the audience and whether or not activities in the plaza were more inclusive, thereby reinforcing community construction, or more exclusive, thereby reinforcing a more circumscribed elite strategy. Using a three levels of person density (0.46 m^2/person, 1 m^2/person, and 3.6 m^2/person), Inomata (2006a) argues the main plazas of Tikal, Copan, and Aguateca had the capacity to accommodate their sites' entire populations. No single plaza at Tikal was large enough to hold all of Tikal's population, although a combination of plazas could do so. This is line with recent work by Ossa et al. (2017) that compares many plazas from throughout Mesoamerica and shows plaza area per capita was scaled inversely for larger settlements compared to smaller settlements; therefore it is unlikely the theatrical performances argued to have acted centripetally vis-à-vis a dispersed Maya settlement pattern were effective for larger, urban sites, while smaller settlements indeed did have the plaza area per capita to accommodate the entire populace. A more intimate population size, in which anonymity is difficult, such as that of Ucanha (2,000 – 2,500 people during the Late Preclassic), and a space for site-wide performances is a key facet of Houston and colleagues' (2003) "moral authority" (as mentioned in chapter 2). Measuring roughly 70 m north/south by 50 m east/west, the Central Plaza would have comfortably fit (1 m^2/person) Ucanha's entire Preclassic population. Given the existence of Late Preclassic stucco masks at Str. 92, about 100 m east of Ucanha's Central Plaza, it is likely that some form of institutionalized authority, was present at Ucanha during the time of plaza construction. Since four causeways converge at Ucanha's Central Plaza, it is almost assured that this space was a critical component of communal formation via site-wide processions and subsequent social activities that took place there.

Access to plazas can also change to meet different political aspirations. For example, Joyce's (et al. 2001; 2008, 2009) work in the Río Verde Valley along the Pacific Coast of Oaxaca, Mexico, shows that Late Preclassic leaders cultivated a sense of community by holding large public feasts in the central plaza. However, Early Classic leaders erected complexes and carved monuments around the perimeter of the main plaza thereby limiting access and commandeering space that used to be more communal. Other data show that, during the Late Classic period, elites focused more on cultivating a hierarchical identity through diacritical feasting and the redistribution of prestige goods only to neighboring elites, thereby undermining the more communally-focused, inclusive feasting and economic practices of the Terminal Preclassic. As a result, the moral authority created by more inclusive feasting and plaza access was violated and leaders lost the support of their constituents, ruling institutions collapsed, and populations declined.

Sociality of Plazas

As much as plazas are physical entities that index labor inputs and frame fields of interactions, they are also a sociopolitical arena where people reaffirm, contest, and judge interpersonal relations and values. Forging a sense of community would have been an important task for emerging elites since political stability allows for a smoother extraction of labor and/or tribute, both common economic endeavors of Preclassic leaders (Hansen 2001; McAnany 2010; Ringle 1999). Likewise, rulers were morally bound to provide not only martial protection and caloric comfort, but also materialized their beneficence through public feasts and ritualized performances (Houston et al. 2003; Inomata 2006b; Stanton and Freidel 2005). Public spectacles, especially ones that incorporate the audience (e.g., pilgrimages and processions) have the ability to temporarily subvert hierarchies and create a moment of *communitas* wherein structural norms can be negotiated and participants feel like one social body (Turner 1972, 1986). Indeed Inomata (2006a:808) argues, "The role of theatrical performance in the constitution of a political community implies that it is a critical arena for the negotiation of meaning and power" in which community is created and re-created. Performances can naturalize dominant ideologies or "public transcripts" by incorporating ideology, historical tales, codes of morality and social order (Demarest 1992; DeMarrais et al. 1996; Scott 1990); nevertheless, audiences are diverse and messages can be misinterpreted, mocked, or rejected. Moreover, who is a performer and who is a spectator provides another avenue of social differentiation: both unity and division.

Beyond performative spectacles, the congregation of people who may not have daily interactions is another important political strategy for maintaining social cohesion. As discussed in chapter 2, the material settings in which people interact directly inform subjectification, or how people navigate the world as intelligible beings. Since the Late Preclassic was a time of increasing population and social differentiation, formalized spaces such as plazas would have been an important tool for creating political subjects that would conform to broader ideas of integration and for euphemizing subordinate roles as larger settlements emerged (Love 1999). Dispersed Maya settlement patterns, especially around this part of the Northern Lowlands where exploitable ecological diversity was minimal, would have also countervailed community formation under centralized authority where aggregation was precipitated by natural economic opportunities (Demarest 1992; Sanders and Webster 1988). However, a variety of social events held in plazas would have provided the populace with economic, social, and religious experiences that were not accessible in more dispersed villages thereby acting as a centripetal force of community cohesion (Freidel 1981). Given that bichromes during the Late Preclassic at Ucanha were rather evenly distributed as evidenced by a low Gini score, it is not implausible that proto-marketing events were held at the Central Plaza. Finally, given the historical context of Preclassic interactions at Ucanha and degree in which social hierarchies were not as rigidly materialized through carved stelae and epigraphic titles as in the Late Classic, the process of subjectification vis-à-vis inherited hierarchy would have been more fluid, a feature which helps the creation of a collective identity. Speaking of a Preclassic plaza at Ceibal during a time of emergent social distinction and negotiations of power, Inomata (2014:29-30) notes, "individuals with diverse backgrounds and expectations could internalize values of the plaza and public events in various ways and could develop their own senses of attachment to the place" in which community emerged without destroying individual autonomy.

Finally, since ethnohistoric and archaeological data indicate plaza events were likely tied to a calendar and therefore repetitive (Hendon 2010; Rice 2009; Tozzer 1941), the concept of embodied knowledge and citation is useful for analyzing social differentiation and cohesion (Hutson 2013a; Inomata and Tsukamoto 2014:12-13). Citationality (see chapter 2), a concept from Butler (1997) that builds on a Foucaultian idea of power, argues historically-situated norms, which are instantiated though interpersonal interactions which are framed by material surroundings, are reproduced through the body in preconscious ways. The norms that guide these bodily actions, however, cannot be fully known or immediately recalled. Therefore, as people nondiscursively “cite” these norms they typically do so with some degree of improvisation, which allows for the possibility of change if these improvisations become reproduced as normative knowledge (e.g., Geertz 1957). Architectural spaces do not just frame citation but also inform this process as media through which individual citations and social norms are (re)produced (Butler 1999; Hutson 2010; Pred 1984). Different spaces dictate different bodily comportment, different bodily citations (Rapoport 1982). The embodied knowledge instilled by people interacting with each other and the built environment of the Central Plaza would have had significant impact, therefore, on the construction of social differentiation but also the hegemonic creation of new iterations of social inequality. Simultaneously, the spectacle (and possibly the memory of physically building this space) would have been sought after, expected, and useful as a citation of community-building experiences.

Test Pitting: Chronology and Construction of the Central Plaza

In order to understand the chronology, construction, and use of Ucanha’s Central Plaza, during the summer of 2013 Celine Lamb, Isabelle Martinez-Muniz, Joseph Stevenson, and Jacob Welch, and I excavated three sub-operations in the Central Plaza of Ucanha (Figure 6.1). The locations of these four pits were influenced by results from GPR survey completed by Dr. Mandy Munro-Stasiuk. Sub-operations A and B both consisted of two 2 x 2 m test units associated with monumental architecture that flanked the Central Plaza. Sub-operation C consisted of a 2 x 6 m trench that ran through a wall that closed off the plaza in the southwest; this sub-operation was intended to reconstruct how access to this space changed (or did not) over time. A more detailed presentation of soil descriptions, ceramic frequencies, and stratigraphy is in the report submitted to INAH (Hutson 2013b).

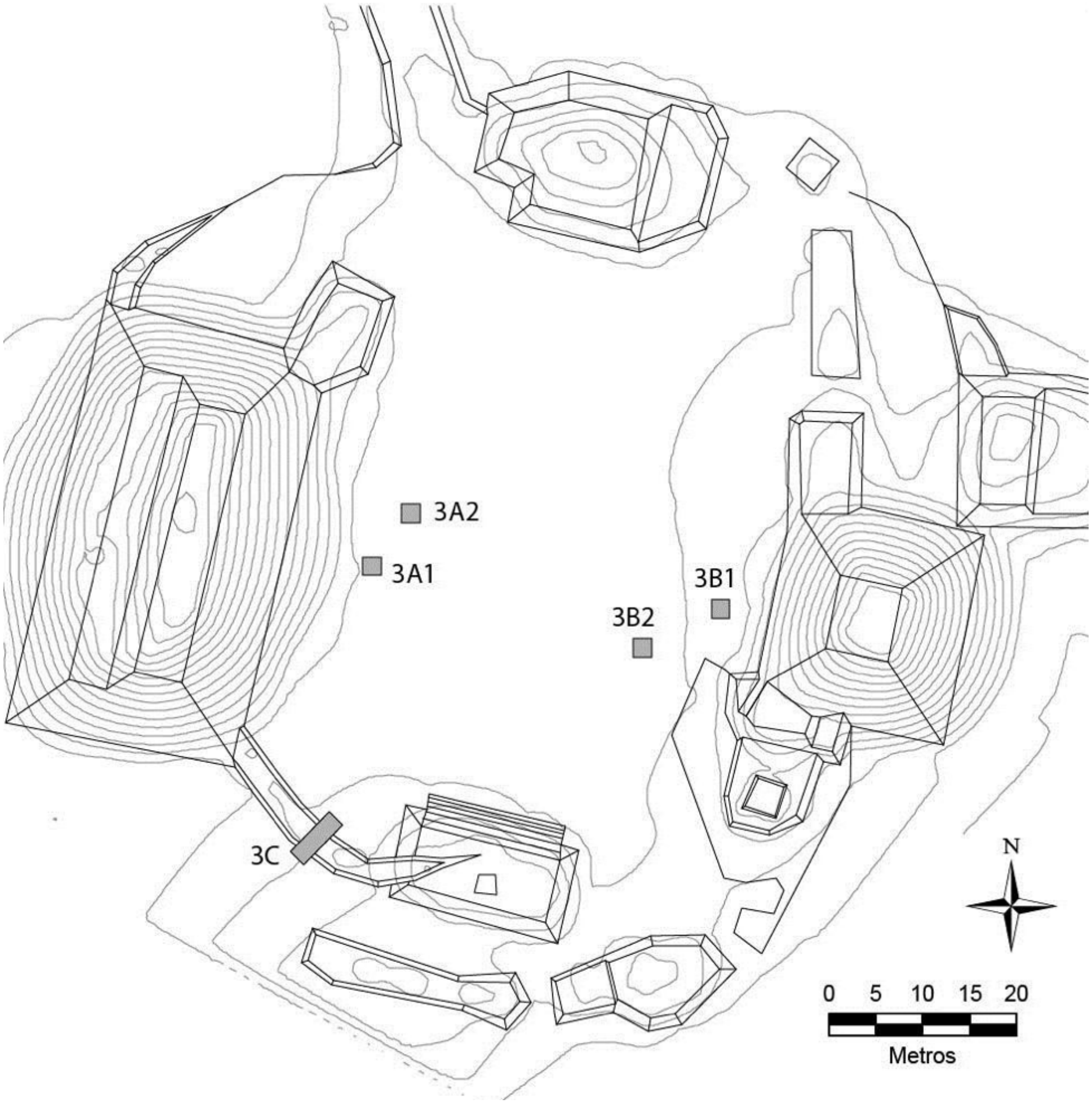

Figure 6.1: Map of the Central Plaza showing location of excavations. Contour lines represent 50 cm.

Operation 3A1

This 2 x 2 m unit was placed in line with the center of the western pyramid (Str. 147) (Figure 6.1). Similar to unit 3B1 placed in front of the eastern pyramid, a series of floors was found. In total five floors of varying degrees of preservation were uncovered and four different soil horizons were found. Unfortunately, none of the floors covered the entire unit, so ceramics from this area were not from a sealed context (Figure 6.2).

The ceramics from lots 1 and 2 (i.e., the area above the first series of floors) are from the Early Classic, Late Classic, and the Postclassic, with a majority dating to the Postclassic. A concentration of Postclassic Mama sherds from a single vessel at the base of Str. 147 likely represents an offering to this massive structure, which would serve as a focal point of past grandeur on the Central Plaza. Given the high number of Postclassic incensarios associated with Str. 149 (Op. 3D; see below), which forms the northern boundary of the Central Plaza, and the overall lack of Postclassic ceramics at residential platforms (suggesting no occupation at Ucanha), this area was seemingly a place of pilgrimage after it was abandoned.

From the levels below Floors 1, 2, and 3, but above Floor 4, this area there is a noticeable decrease in the amount of ceramics recovered. Between Floor 3 and the top Floor 4 there was also a soil change towards a lighter brown (10 YR 3/3) finer loam, probably as the result of soil mixing with sascab. Areas where Floor 3 covered the unit and areas where it did not were excavated separately as lots 3A1-5 and 3A1-4 respectively. However, only three identifiable sherds were recovered (two Muna and one Saban unslipped). We recovered only 13 identifiable ceramics recovered from a sediment layer below Floors 1 – 3 and above Floors 4 – 5. Eleven of these are from the Late

Classic and two are from the Late Preclassic. The nearby unit 3A2, however, dated the first three Floors to the Late Preclassic.

With Floors 4 and 5, levels were controlled for targeting areas covered and uncovered by the floors. For example, 3A1-6 consisted of the area not covered by a floor—noticeably floors 4 and 5 were both not present in the southwestern part of the unit. Lot 6 consisted of .6 m^2 in the southwestern part of the unit and terminated with the presence of large fill rocks at roughly 70 cmbsd. Chi'ich was encountered throughout this lot. 3A1-7 and 3A1-8 dug through floors 4 and 5, which were closely superimposed over one another. The presence of roots in these lots was noted and may have been to blame for the poor preservation of the floor in some parts of the unit. Floor 4 was roughly 4 cm thick and started at roughly 55 cmbsd 3A1-8 went through floor 5 and terminated at the beginning of large rocks associated with dry core fill (similar to the end of lot 6). All of the ceramics recovered from these levels were Late Preclassic, including Sierra Flaky, Xanaba Red, Unto, and Tipikal.

Below Floors 4 and 5, 3A1-9 consists of the mixed fill. Similar to the construction method below floors seen at the unit in front of Str. 151/Op.1 (the floors above dated to the end of the Preclassic; see Chapter 5), flat stones are placed horizontally on top of vertical tabular stones to form some type of support (Figure 6.3). This similarity is interesting because not all floors that dated to the Late Preclassic were supported by this construction method. Elsewhere in the Maya studies of monumental construction, similarities and differences in construction have been interpreted as the product of different groups of people donating labor to leaders (Lucero 2007). Stones were also placed in the area between the vertically stacked stones. Beneath this fill layer we encountered a soil that was probably the original ground surface. Ceramics from this level also date to the Late Preclassic (Sierra Flaky, Xanaba Red, Unto and Tipikal). These data suggest floors 4 and 5 were built around the Late Preclassic period.

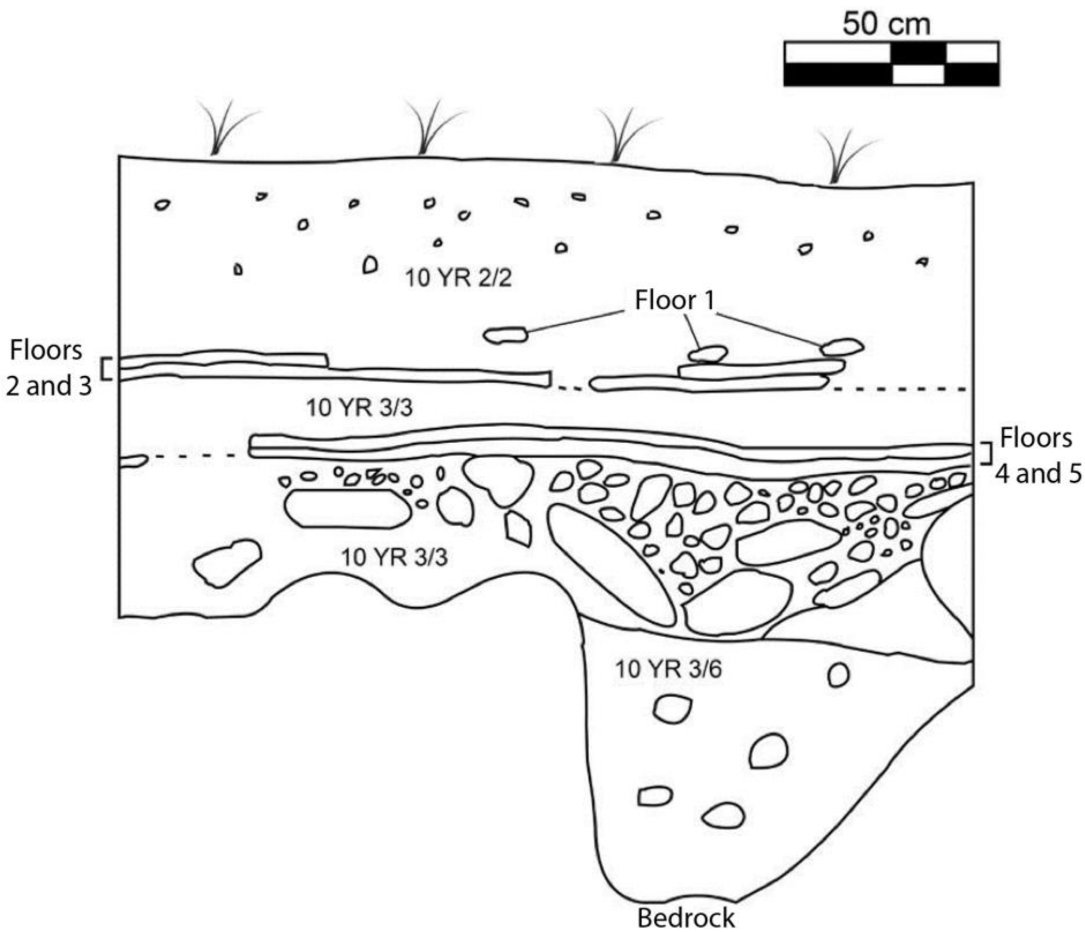

Figure 6.2. West profile sketch of 3A1 showing five floors of various preservation.

Figure 6.3. Vertically set stones under a horizontal level of smaller rocks form a support for Floors 4 and 5 (Late Preclassic) in unit 3A1.

This original ground surface was lighter brown (10 YR 3/3) silty loam and was noticeably finer in texture than the previous soil horizons. Like above levels, the ceramics were nearly all from the Late Preclassic. A radiocarbon assay (AA103818; wood charcoal; $\delta^{13}C = -26.5‰$) from below Floor 5 dated to ca AD 1219 – 1381 ($p = 0.95$), which does not accord with any of the relative dating. Therefore, it is likely this radiocarbon sample was contaminated.

Operation 3A2

This 2 x 2 m unit was placed in the western portion of the central plaza. Its location was chosen based on results from ground penetrating radar, conducted by Professor Mandy Munro-Stasiuk from the geography department of Kent State

University, which highlighted a rectilinear anomaly at roughly 1 m below the surface. Originally we thought this anomaly might represent a buried structure; however, results from this test pit did not locate any buried structure. Similar to other test pits in the plaza, we uncovered a series of three superimposed floors.

The first level was dug at a 20 cm arbitrary level, however upon clearing down at a 20 cm arbitrary level, a floor that covered nearly the entire unit was encountered as well as an alignment of two tabular cut stones (Figure 6.4). These two stones were left in place because they might represent an architectural feature that continues beyond the scope of this unit. Unfortunately, we did not have time to expand this unit in order to understand the nature of this feature. In the northern half of the unit we found a concentration of larger stones running basically east-west; however, they were haphazardly placed with no clear linear alignments. Since these rocks were not thought to represent an architectural feature they were removed. This lot terminated between 34 and 44 cmbsd at the surface of the first floor, which was roughly 3 cm thick.

Figure 6.4. Floor 1 exposed at the end of 3A2-2.

Directly Below Floor 1 we found another well-preserved floor (Floor 2), which was similar in color and thickness to the first floor. Floor 2 covered the entire unit except for a small area in the northwest and central part (Figure 6.5).

Figure 6.5. Floor 2 exposed in 3A2 with part of Floor 1 preserved in southeast corner. Facing north.

Directly under Floor 2 was Floor 3, which was also well-preserved but did not cover a small area ($0.12m^2$) in the northwest corner of the unit (Figure 6.6). In this small area a single sherd of Saban Becoob was found.

Figure 6.6. Picture of Floor 3 with Floors 1 and 2 preserved in the southeast corner. Facing north.

Below Floor 3 there was chi'ich, sascab, and medium- to large-sized rocks associated with fill beneath the series of floors. In some places the fill is similar to that found in 3A1 insofar as some vertically placed stones are capped with other horizontal, tabublar rocks. Sherds in this level were from the Late Preclassic to Early Classic and there was a single Chunhinta Nacolal Incised, which dates to the Middle Preclassic. Beneath this stone fill the soil horizon was a light brown (10 YR 3/3) silty loam with still some large stones and chi'ich present from the dry-core fill. Upon excavating down we noticed another soil change towards a reddish-brown (*kancab*). At this soil change along the west edge of the pit we collected four pieces of charcoal (Figure 6.7). These samples were part of the "sealed" context beneath the series of floors and were collected exactly at 90 cm south and 35 cm east of the northwestern corner at a depth of 94 cmbsd. One of these samples (AA103816; wood charcoal; $\delta^{13}C$ = -25.7‰) dated to cal AD 1035 – 1210 (p = 0.95); however, ceramics from this level (and subsequent levels) dated to the Terminal Preclassic/Protoclassic, including Huachinango, Shangurro and a Sierra-Xanaba hybrid. Thus, this sample appears to be contaminated. From the kancab layer, the ceramics included Joventud Nolo (Middle Preclassic); Sierra Flaky, Huachinango (Late Preclassic), and eroded Timucuy (Ealrly Classic). A radiocarbon assay (AA103817; wood charcoal; $\delta^{13}C$ = -26.1‰) from the *kancab* context dated to 165 – 47 cal BC (p = 0.68) or 202 cal BC – cal AD 18 (p=0.95). None of the ceramics below the series floors dated later than the Early Classic and one of the radiocarbon dates from just below the fill layer dated to the Terminal Preclassic. Therefore, the series of floors were constructed by the end of the Preclassic since the ceramics below them and a radiocarbon sample date to this period.

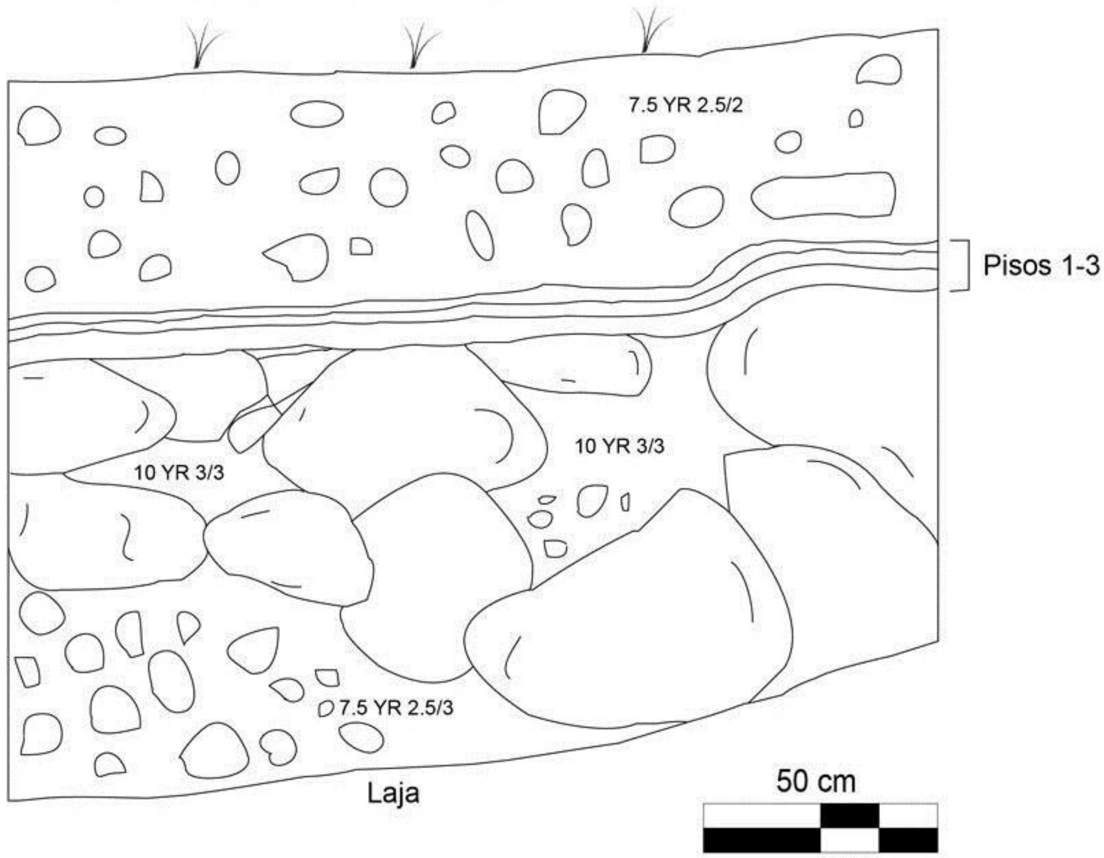

Figure 6.7. Profile of 3A2 south wall.

Operation 3B1

A 2 x 2 m test pit (Op. 3B1) was placed in the plaza in line with the center of the eastern pyramid (Str. 148) of the central plaza in order to help clarify the chronology of the plaza area and further understand activities associated with these large public monuments. A series of five well-preserved floors that sealed the entire extent of the unit was found (Figure 6.8).

Figure 6.8 Unit 3B1 included a series of five superimposed floors, including a layer of marl between Floors 4 and Floor 5 (Floor 5 is shown here completely covering the unit). Facing north.

Since we discovered that the four uppermost floors were immediately one on top each other and there was no sediment and/or artifacts between each floor, we collectively removed the four floors and discovered a layer of *sascab* (roughly 5 cm thick). In order to clearly identify construction sequences of these floors, we stepped a sample of each of the four floors in the northeast corner of the unit (Figure 6.8). The lack of sediment or artifacts between each floor coupled with their preservation suggests this area was kept clean and construction episodes occurred before a structural need for rebuilding. Upon removing the floors, all four floors were found in all side walls suggesting a "sealed" context. Interestingly, the first two floors had a similar whitish-yellow color while the next two floors were more yellowish in color suggesting two distinct periods of construction. Floor 1 is 2.5 cm thick, floor 2 is 2.0 cm thick, floor 3 is 2.5 cm thick, and floor 4 is 3.5 cm thick. Continuing further down after removing the layer of sascab, we found a thin layer of soil (approximately 5 cm thick) that was sitting upon a well-preserved fifth floor. This soil had a smoother texture and a lighter coloration (10 YR 4/2) than the previous soil layer. A sample of charcoal was taken from the matrix of the top of floor 5 directly below this soil layer. Immediately under floor 5 in lot 4, we found a concentration of bichrome pottery sherds (located at 80 – 100 south and 35 – 50 cm to the west of the northwestern corner of the unit at a depth of 65 cmbsd). This was bagged separately and weighed 330 g. Of final note, at 5 cm floor 5 was thicker than each previous floor and had a more grayish-reddish coloration.

The majority of the ceramics (90 out of 111 identifiable sherds) from above the initial series of floors (Lots 1 and 2) date to the Late Classic (e.g., Muna pizarra, Teabo rojo, Ich Canziho estriado, Chuburna café) with the next highest frequency (n=10) coming from the Postclassic (e.g., Mama rojo and various types of Navula). The presence of a Chen Mul modelado incensario sherd suggests this area was used for ritual offerings. Seven sherds of Shangurro rojo sobre naranja suggest an Early Classic presence as well. Finally, one sherd of Polvero and Joventud rojo, both dating to the Preclassic, were found; however, it is likely these do not represent a cultural occupation at this stratigraphy. Within these two lots, 35 sherds were too eroded for identification and a total of 2.978 kg of ceramics were recovered. Additionally, two small pieces of shell were found.

The thin layer of soil between the first four floors and the fifth floor (3B1-3), only contained nine sherds, three of which were unidentifiable. One of the six identifiable sherds (date to the Middle Preclassic (Joventud rojo), and five recovered sherd definitively dates to the Terminal Preclassic (Xanaba and Shangurro rojo sobre naranja). A sample of charcoal was also taken in hopes of clarifying chronology.

The levels beneath the fifth floor (3B1-4 and 3B1-5) overwhelmingly date to the Middle/Late Preclassic. Of the 95 identifiable sherds found, only three did not date to this period (Oxil Elote estriado impreso). Pottery from the Groups Xanaba, Joventud, Dzudzuquil, Sierra, and Sabán groups was found along with a variety of types for Joventud, Dzudzuquil and Unslipped Sabán, all of which date to the Middle Preclassic. In fact, 41.58% of the ceramics dated to the Middle Preclassic, which is a high frequency for Ucanha. As will be seen elsewhere in the Central Plaza, the elevated presence of Middle Preclassic sherds indicates this space was likely a culturally important node on the landscape early in Ucanha's history.

Operation 3B2

Another 2 x 2 m unit (3B2) was placed near Str. 148. (Figure 6.1) because previous ground penetrating radar (GPR) work done by Dr. Mandy Munro-Stasiuk identified a rectilinear anomaly at approximately 50 cmbsd. Specifically, this unit hoped to find the southwest corner of this anomaly, which we thought could possibly represent a buried structure. Unfortunately, no buried structure was found, yet we did encounter another series of floors, albeit poorly preserved, that helped elucidate refurbishing sequences in the central plaza. While the northern profile shows parts of three different floors, only one floor was found during excavations due to poor preservation. The lack of preservation was probably the result of the large root running through the northern wall and other factors of bioturbation common in the area. This unit terminated at bedrock between 60 and 80 cmbsd. Nevertheless, it does not appear that all five floors seen in 3B1 extended out to this area.

Interestingly, all of the ceramics recovered from unit 3B2, with the exception of two sherds, date to the Preclassic period. For example, the vast majority of the sherds found in the final lot (20 of the 21 identifiable sherds) date confidently to the Middle Preclassic period as Chunhinta, Joventud, and Dzuzuquil, are all present. The presence of two Kin Orange-Red sherds from the Ek complex, which also includes Almeja Burnished Gray and Achiotes Unslipped, suggest Ucanha was possibly founded as early as the beginning of the Middle Preclassic. In other areas of the western Yucatan (e.g., Kiuic and Komchen), this group has been dated in conjunction with radiocarbon dates to around 900 – 800 BCE thereby showing pre-Mamom occupation of the Northern Lowlands (Andrews et al. 2018). At neighboring Kancab, a complete Kin Orange-Red cajete cache was found in the central plaza suggesting the presence of this pottery type either represents an actual occupation or an attempt to legitimize the creation of sacred space by using heirloomed pieces tied to ancestry. The more research done in the Northern Lowlands, however, the more we see early Preclassic Ek phase occupations and the founding of sites closely intertwined with Ek phase around public monumental architecture and places like plazas (e.g., Komchen [Andrews et al. 2018:62-65]; Kiuic [Andrews et al. 2018:70-72]; Paso del Macho [Parker et al. 2018]). In fact all lots within 3B2 contained hallmark Middle Preclassic groups (Chunhinta, Joventud, Dzudzuquil) suggesting this area was settled by at least the 6th or 5th century BCE. Unto, Xanaba and

Sabán sherds were also present, indicating a continued occupation into the Late and Terminal Preclassic. The dearth of Early and Late Classic ceramics probably is the result of cleaning the area as opposed to an absence of use.

Finally, pieces of shell were found in all lots except the final one. As mentioned early, a sizable conch columnella was found in the first lot.

Operation 3C

Sub-Op. C refers to the trench to the south of the plaza that transects a stone wall. Sub-Op. C was divided into three 2 x 2m units that ran perpendicular to the stone wall enclosing the central plaza. The orientation of the stone wall is 130 degrees, and the trench was placed at a right angle and spanned the breadth of the wall—approximately 5 m—and extended about 1 meter north of the wall into the central plaza. The purpose of this sub-operation was to ascertain the construction method of the wall. Specifically, we wanted to know whether the construction was well-thought and systematic or was rather haphazard and quickly made. In the case of the former, it is possible the wall functioned to partition sacred space; while in the case of the latter, it is possible the wall had a defensive functioned due to its erratic construction. However, neither method is mutually exclusive of either function in and of itself.

In general, on the surface the wall resembles unconsolidated fill and no clear lines or systematic construction technique is present. In fact, two rocks to the east of the trench that were part of the wall construction were broken pieces of metates, suggesting any stone object that was readily available was utilized in constructing the wall. Unlike sacbé construction in some areas, no cut stones clearly demarcated the basal boundary of the wall. However, after removing the first course of stones, large vertically-placed stones do appear to form a structural “spine” of the wall. In Figure 6.9 the two large vertically-placed stones run through the middle of the wall and function as a support. The large flat stone above the two vertical stones has collapsed and was probably also part of this “spine”. To the west of the trench, a pathway that cuts through the wall exposes the stratigraphy of the wall on both sides. In the eastern profile of this pathway, a vertically-placed stone is also present and an imaginary line would connect this stone with the other vertically-placed stones exposed in the wall trench. Therefore, it is likely this structural “spine” is a planned construction feature that runs through the entirety of the wall. Yet, at this point, it is still difficult to definitely state whether the function of the wall was defensive, sociopolitical, both, or neither. Regardless, this wall as well as other buildings and walls essentially limited access to the Central Plaza to only the intra-site sacbé to the north near Structure 149.

Figure 6.9 Vertically-placed large rocks forming “spine” of wall around southern part of Central Plaza. Facing east.

Dating the construction of the wall is problematic because ceramic types from a variety of chronological periods were recovered from similar stratigraphic layers. For example, in unit 3C.1, the southernmost unit in the trench, we recovered an overwhelming majority of Middle/Late Preclassic ceramics. Indeed, of the 46 identifiable sherds only one (Kinich naranja) did not date to the Preclassic period. While 36 sherds were unidentifiable and could date to a later period, 37% ceramics in this unit—the majority of which were part of construction fill—come from the Chunhinta, Dzudzuquil, and Joventud groups and date to the Middle Classic. Yet the remaining 62.9% of the ceramics come from Late Preclassic groups (e.g., Xanaba, Saban, and Sierra).

On the other hand, ceramics recovered from unit 3C.2, the unit in the middle of the wall trench, are just as likely to date to the Middle/Late Preclassic as the Late Classic. Of the 18 identifiable sherds, seven date the Late Classic (represented by Teabo, Muna, Ich Canziho, and Chuburna) and 11 date to the Preclassic (Joventud, Chunhinta, Chancenote and Xanaba).

Figure 6.10. Sierra Red from Peten with cacao pod iconography.

Combining all three units (3C1, 3C2, and 3C3), however, 82% of identifiable sherds (n = 100) date to the Preclassic (36% to the Middle Preclassic and 46% to the Late Preclassic) and only 13% date to the Late Classic, which likely are the product of discard from plaza use during this latter period. One sherd from the Late Preclassic includes a Sierra Red from the Petén with what appears to be an image of a cacao pod indexing at least some contact or trade with people in the Southern Lowlands (Figure 6.10). This version of Sierra Red is not flaky and the slip is well-adhered, thick, and lustrous, all of which are characteristic of Sierra Red originating from the Petén. Evidence from the Central Plaza indicating the nearby monumental public architecture was constructed during the Late Preclassic coupled with the high percentages of ceramics from Op. 3C that date to the Prelcassic, it is likely this wall was constructed sometime during the latter half of the Preclassic. The relatively high frequency of Middle Preclassic ceramics recovered from this operation also confirm that the Central Plaza was one of the oldest parts of Ucanha and, therefore, a place that anchored the community.

Operation 3D/Structure 149: A Raised Performative Space

Structure 149 forms the northern boundary of the Central Plaza. In its final form, this structure measures 35 m x 20 m and stands roughly 3 m tall (Figure 6.11). Str. 149 also abuts an intra-site sacbé that runs north to a raised plaza in front of the largest pyramid at the site (Str. 151). The northwestern corner of the Plaza is the only unequivocal point of easy access to the Central Plaza, at least in the plaza's final form, and it is the only area in which one of the four sacbeob that form the quadripartite layout of Ucanha actually continues to the Central Plaza. As mentioned in chapters 3 and 5, the relationship between sacbeob and the Central Plaza would have indexed the creation of the cosmos and functionally brought the community together through ritual processions. Since Str. 149 the sacbé that enters the main plaza, it would have probably been an important stage or backdrop for rituals and performances or maybe a stand from which to view processions along the causeway. Given that it is raised above the plaza and has a relatively flat surface, compared to the more pyramidal form of Strs. 147 and 148 to the west and east, Str. 149 would have been an important feature of the Central Plaza.

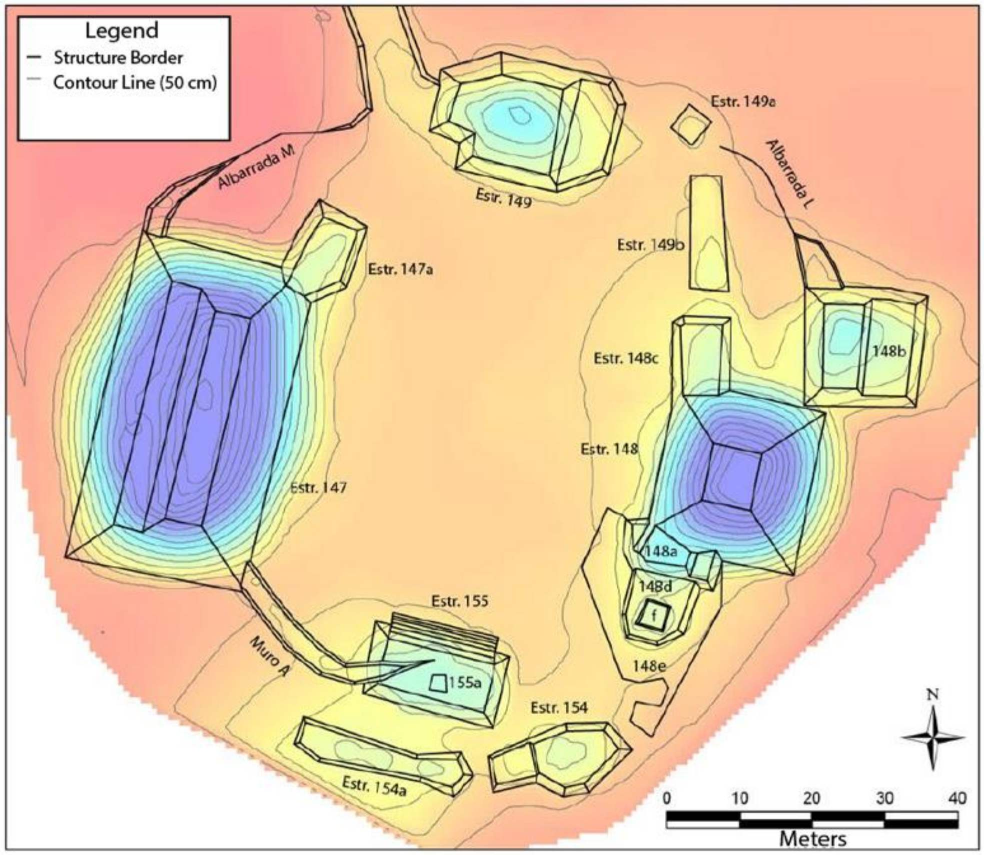

Figure 6.11. Topographic of Central Plaza.

Excavations at Str. 149 were largely completed by Daniel Vallejo-Calíz and consisted of placing a 10 m x 10 m grid (25 total 2 x 2 m units) over the southeastern portion of the structure (Figure 6.12). These units are labeled 1 through 26 and will be referenced as 3D and then the number of the unit. For example, 3D.11 would reference the unit labeled “11” in Figure 6.12 In total, ten architectural features and six construction phases dating from the Late Preclassic to the Postclassic were identified. Architectural features were named “F” and then a number according to the sequence in which they were uncovered. While significant construction and use was present during the Late Classic and to a lesser extent the Postclassic, the focus of this dissertation is the Preclassic and Early Classic. Therefore, these latter time periods will be mentioned but for a more detailed account of construction, chronology, and use, please consult Vallejo-Caliz's report (2016:254-271).

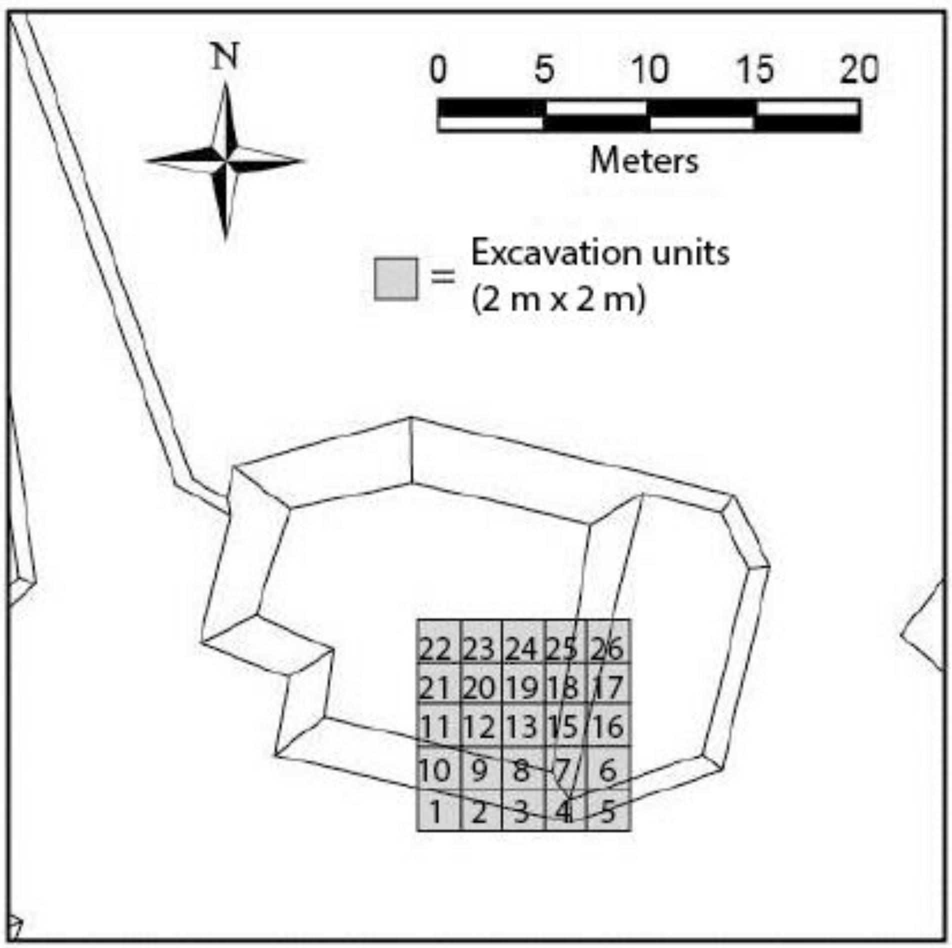

Figure 6.12. Numbered grid of excavation units for Op. 3D (can't be right; some units number up to 29).

One of the construction episodes includes a megalithic staircase (Feature 6 or F6) that was initially uncovered in units 3D.11 and 3D.12. These stones were nicely rounded into the "pillow shape" common to the megalithic style and measured 60 – 80 cm long by

30 – 50 cm wide by 20 cm tall (Figure 6.13 and 6.14). Parts of the megalithic staircase were covered in stucco (Figure 6.15 and Figure 6.16). In places this stucco lips on the base of another megalithic stair suggesting the entire staircase was plastered in antiquity.

Figure 6.13. Megalithic staircase (F6) abutting wall or façade of construction phase with smaller rectangular stones in unit 3D.12-3. Facing north.

Figure 6.14. Continuation of megalithic staircase (F6) moving south towards plaza in 3D12-3. Facing west.

Figure 6.15. In this photo (3D.11-3), the megalithic staircase (F6) continues west from 3D.12-3. Stucco was preserved on a stone suggesting the entire staircase would have been plastered. Photo taken facing east.

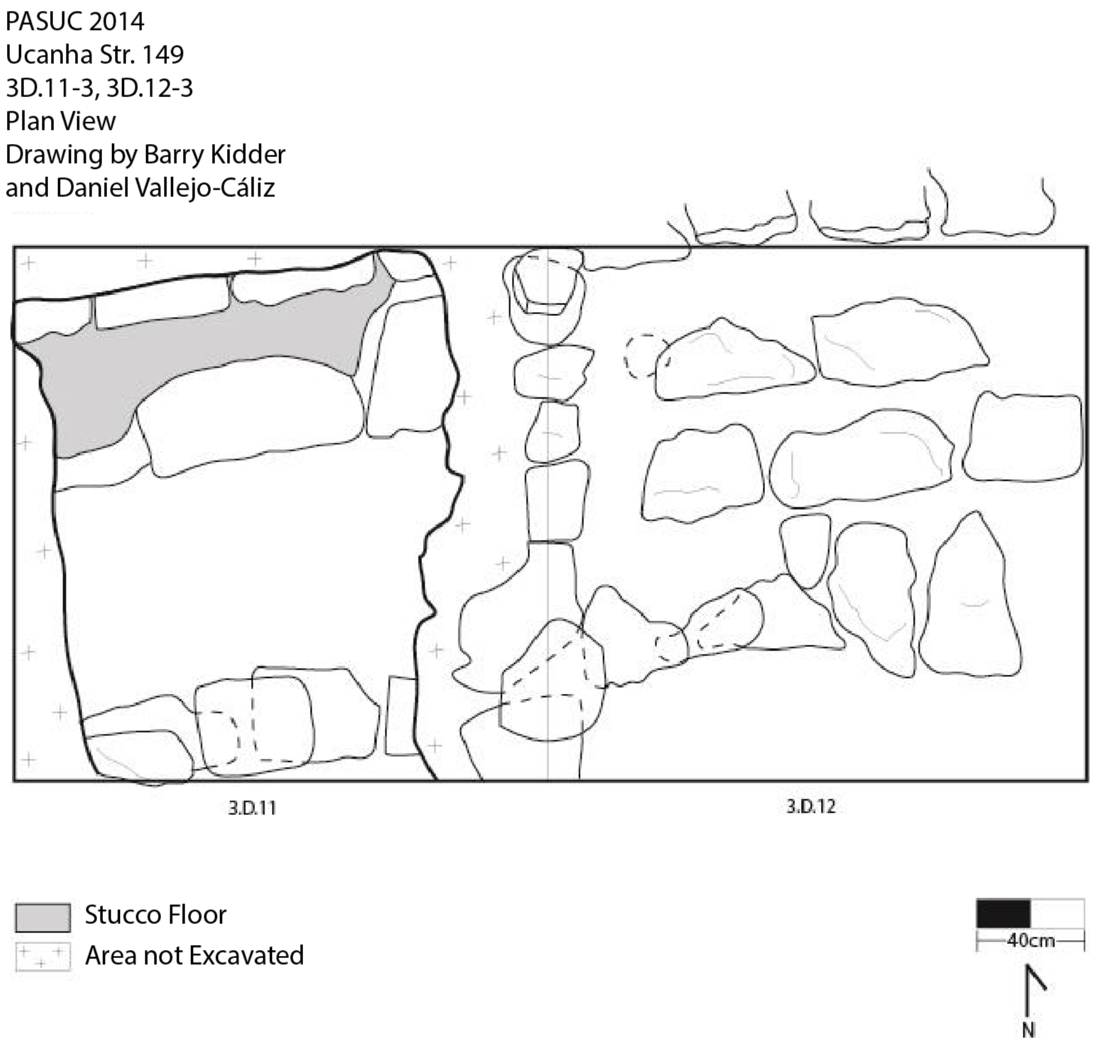

Figure 6.16. Portions of megalithic staircase covered in stucco in 3D.11.

As seen in Figure 6.17 below, F6 is parallel to another construction feature (F9) that consists of smaller rectangular stones that form either the façade of a building and/or function as a retaining wall for a raised platform. Figure 6.18 highlights how this megalithic staircase terminated at the base of a raised portion of Str. 149, a raised portion that was relatively flat and broad and would have elevated someone above the Central Plaza (e.g., see Pedro Eb Uc in the yellow shirt overseeing another worker cleaning off the façade). Excavations between F6 and F9 revealed that F9 actually continues down roughly 1.6 m, consists of an upper façade and a lower façade, and extends below F6 (Figure 6.19) before a level of mixed fill begins as seen in 3D.23. Indeed, in the last level of 3D.23 (Figure 6.20), it can be seen that both F6 and F9 share the same mixed fill, indicating contemporaneity. The majority of the identifiable ceramics (61.02%) recovered from between the surface level of F6 and F9 down to nuclear fill date to the Preclassic-Classic transition, but ceramics from the Late Classic and Postclassic are present. Given the significant construction phases and use of Str. 149 during these later periods, it is likely sherds from this period moved downward from formation processes.

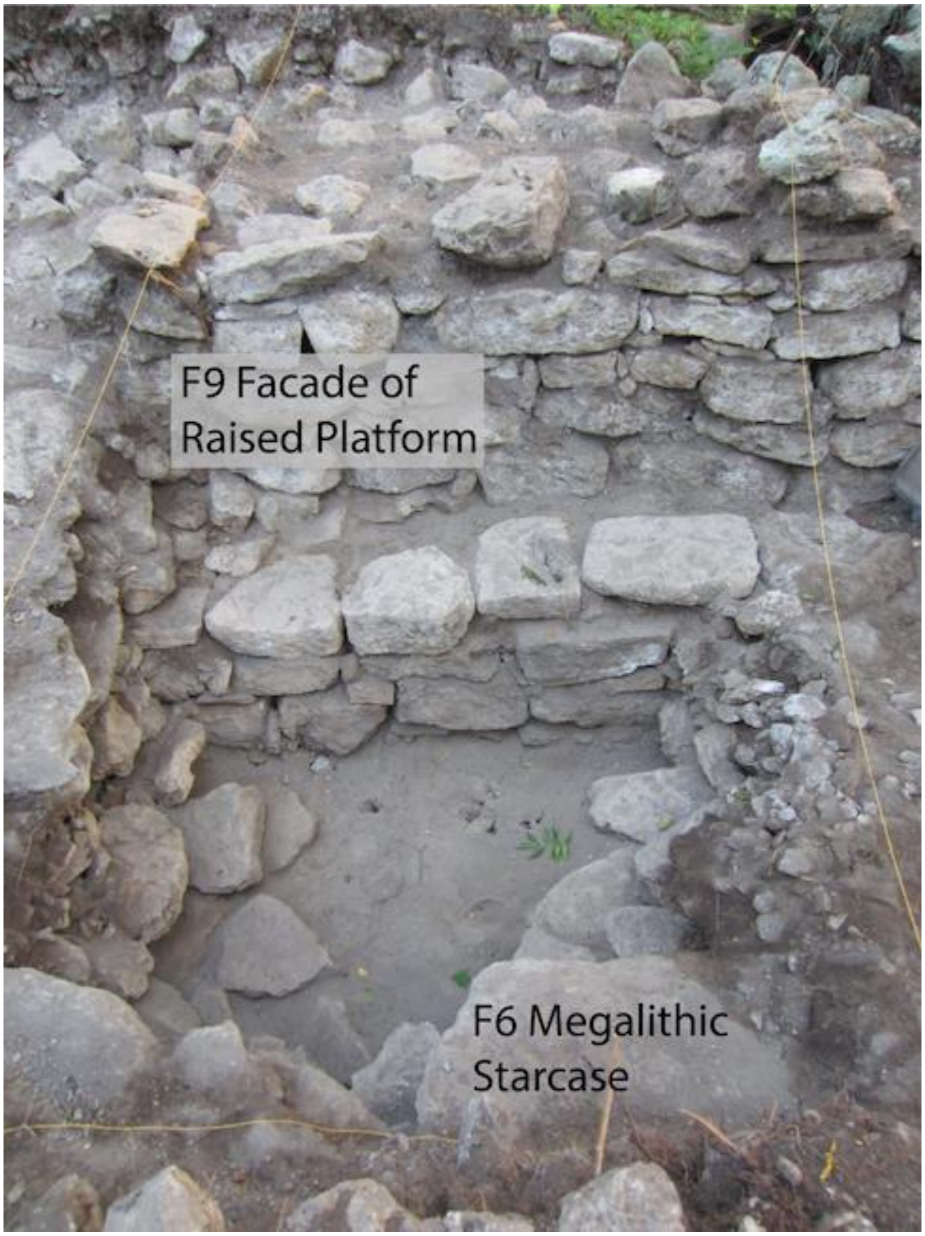

Figure 6.17. The megalithic staircase (F6) has the same orientation as a raised platform façade (F9) as see in 3D.23.

Figure 6.18. Figure shows on top of F9, Str. 149 levels out to form broad, open platform. The megalithic staircase is highlighted in yellow and leads up to this elevated flat area.

Figure 6.19. F9 is in the foreground and F6 is in the background in unit 3D.23. F9 continues down below surface of megalithic staircase and then there is fill. Facing north.

Figure 6.20. Shown here in unit 3D.23, F9 is to the right and F6 is to the left, and the fill between the two features is similar. F9 continues down below surface of megalithic staircase. Facing west.

To better understand the construction temporality of F9, we placed a unit behind this feature and dug down to see if other phases were below and to collect a ceramic sample. Digging behind F9, in the final level (3D.27-3) we recovered a small ceramic sample (n = 23 identifiable sherds) in which all but one sherd dated to the Terminal Preclassic/Protoclassic. These ceramic sherds included Shangurro with striated interiors from an olla, a type of Polvero that is incised (Lechugal incised Var. Chikin), and a Xanaba sherd from a composite silhouette, all of which are also associated with Protoclassic attributes. Also, in this same unit, roughly 1.2 below fragments of a floor, a sediment layer of a loose light gray (10 YR 7/1) sand with small rocks was found. In this matrix, a deposit of numerous fragmented stucco pieces was uncovered. Functioning more or less as fill, this deposit consisted of hundreds of pieces of stucco between 5 and 30 cm in length. Some were planar and some had a degree of curvature suggesting they came from various locations, including floors and architecture. In other parts of the Maya world, elevated structures, especially in spaces that “center” the site, have cosmological significance as living mountains (*witz*) that provide sustenance as nodes of creation. Since there is a reciprocal obligation between people and animate buildings on the landscape, mass deposits of refuse have been interpreted as offerings or dedications to certain structures (Becker 1992; Moholy-Nagy 1997). Therefore, it is possible that this stucco offering was used to animate this building or at least serve as a dedication for one of the earliest phases of construction of Str. 149. As seen from other excavations in the Central Plaza, the Terminal Preclassic/Protoclassic was a period of significant labor inputs and erecting a space the integrated the people of Ucanha on a communal level sometime around the process of larger regional integration with Ucí. The deposition of large amounts of stucco could have functioned as a metaphor for a collective offering of labor—as realized in the amount of resources and time required to produce stucco—to new rulers who were trying to forge a sense of community and generalized trust.

Ceramics (n = 22) from the Late Preclassic to the Early Classic underwent attribute analysis (see next chapter for a more in-depth discussion). From 3D.27 associated with F9 and associated with the plaster deposit, sherds from composite silhouette forms of Xanaba and Polvero Lechugal were recovered, suggesting a Terminal Preclassic/Protoclassic date. Contexts associated with the megalithic staircase also provided ceramics well-preserved enough for attribute analysis from the Protoclassic (everted thickened rims from Dzilam Verde unrestricted cajetes, an everted thickened and an outcurving thickened rim from Xanaba straight cajetes, a finely-made direct rim from Tipikal ollas) as well as ceramics from throughout the Early Classic (an everted thickened rim from a Timucuy olla, a direct rim from an unslipped Oxil olla). Unfortunately, rims recovered from Str. 149 did not provide a robust sample size. Nevertheless, rims recovered from serving vessels indicate that these vessels were large suggesting large amounts of food contained therein. For example, one extended bolstered rim from a Xanaba straight-walled cajete had a rim diameter of 50 cm, which was the second largest opening of any vessel recovered at Ucanha and more than two standard deviations greater than the average (29.96 cm with $s = \pm 7.523$). Given the large size of this vessel and heft when full of food, it is likely that the extended bolstered rim functioned as a grip—similar to the form of Late Classic Muna cazuelas—in order to carry such weight. An exterior thickened Xanaba cajete rim with a diameter of 34 cm and an orifice diameter of 31 cm was found. While only two large rims are not enough to make statistical claims of significant difference, these rims are both larger than the 30 cm threshold associated with larger-scale feasting in the Maya area (LeCount 2001:945; Wells 2007). The elevated, flat-top form of Str. 149 (see Figure 6.18) during the Preclassic and into the Early Classic would have provided an ideal setting for more public levels of food consumption and performances. Surely only two sherds are not enough to make definitive claims, but they do at least hint at the possibility of public, large-scale feasting and/or spectacle at the Central Plaza.

Other excavations from Structure 149 indicate that the Late Classic was another period of major construction and use. The majority of the ceramics found date to this period (55.70%). Another staircase dating to the Late Classic was built over the megalithic staircase and some nice veneer Puuc stones were placed where the structure meets the Central Plaza (Figure 6.21 and Figure 6.22). The diversity of ceramic forms, obsidian artifacts (n = 28 from levels that mostly date to the Late Classic), and lithic debitage found from the Late Classic led Vallejo-Caliz to suggest that this structure was likely an elite residence and/or a center for community activities such as the preparation and consumption of food.

Figure 6.22. Earlier excavations show later, poorer-quality staircase over megalithic staircase (below where workmen are standing). Facing north.

Figure 6.23. Earlier excavations show later, poorer-quality staircase over megalithic staircase (below where workmen are standing). Image also gives an idea of how Str. 149 would have lifted people above Central Plaza and sacbé running to the North Group. Facing north.

Excavations at the base of Structure 149 and into the Central Plaza also uncovered a series of floors as seen in the other test pits Op. 3A and Op. 3B. In total five floors were found. Above the floors, we recovered a mix of ceramics from the Late Preclassic to the Postclassic (n = 78) with the majority dating to the Postclassic (56.41%) and Late Classic (30.77%). Then a series of four superimposed floors were exposed with the second floor covering the entire area of the unit. Below these floors were found 11 sherds, all of which dated to the Late Preclassic, including Protoclassic wares like Huachinango and Polvero. Clearing down a bit more we found a fifth and dug through this floor and chi'ich until we reached a soil change to kancab. From this context we recovered eight sherds of Xanaba.

From the kancab layer we found a sherd of Polvero. Since Xanaba and Polvero date to the Terminal Preclassic/Protoclassic at Komchen and Izamal, the relative chronology indicates these five floors were constructed sometime during this period. This chronology bolsters the interpretation that plaster floors of the Central Plaza (and other monumental contexts) were constructed during the latter part of the Preclassic.

This structure was also of great importance during the Postclassic as were other monumental constructions in the Central Plaza. Numerous fragments (n = 181) of Postclassic incensarios (Chen Mul and Unslipped Navula) were recovered, which is significantly higher than found at all other contexts at Ucanha (n = 8) and greater than all other contexts of the entire project area combined (n = 138). This subsequent veneration after Ucanha was by and large abandoned shows Structure 149 had an important presence on the architectural landscape as well as the social fabric of the site for over 2000 years. Clearly this structure was an integral node in the social memory of the ancient Maya inhabitants.

Operation 3E: Geochemical Assays and the Residues of Active Space in the Central Plaza

Geochemical Methods and Patterns of Past Activity Areas

Phosphate analysis, like GIS, has become a common technique in archaeology. Phosphate—or more appropriately phosphorous (P) analysis since not all forms P of are indeed phosphates (Bethell and Máté 1989)—is the most useful element for understanding past human activities because it readily affixes to the soil and in general does not move too much from its original place of deposition. Generally P is stable and immobile because of a hexagonal bonding structure (due to its 6 valence e-), and readily bonds with Fe, Al, and Ca ions to form inorganic P minerals and organic P esters

(Holliday and Gartner 2007). The ability to identify activity areas, even in the absence of macroscopic evidence, has been an enormous step forward at the household level as well as more communal spaces like plazas (Hutson and Terry 2006; Robin 2003; Wells 2004; Wells et al. 2007).

Phosphate is useful for identifying areas of food preparation and consumption since all living organisms contain P in their genetic makeup and, as mentioned earlier, P is comparatively immobile once deposited into the soil. Perhaps most importantly, P analysis can help identify food prep and consumption areas even when no macroscopic material remains exist. Additionally, in the Maya area high pH and high P levels found on an elevated platform at Sayil suggest probable areas of food processing and/or storage. The high pH levels may have to do with the fact that "Traditional Maya maize processing and storage notably involves large quantities of dissolved and powdered lime that subsequently soak or mix into the associated soil" (Smyth et al. 1995:327). Lime, as mostly calcium, would change the pH levels. The use of P in identifying feasting areas has also been applied with great success (Wells 2004, 2010). For example, while relatively high levels of P are associated with preparation and consumption, high levels of Na and K (associated with woodash from cooking) and an increased pH level (associated with maize processing) are more likely to be areas of preparation (Wells 2004).

In conjunction with contextual, configurational, and distributional data (Hirth 1998), elevated levels of P have been used as part of configurational approaches to identifying marketplaces among the ancient Maya. At Chunchucmil Dahlin et al. (2007) took P samples from the occupational surfaces of "kiosk" looking structures in a centrally located plaza and compared them readings from a modern marketplace in the Guatemalan highlands to test whether or not chemical data supported his marketplace hypothesis. Indeed, the P levels were twenty time greater than the control group and roughly matched those numbers from the Guatemalan market (although the modern "marketplace" was located next to a soccer field which might have impacted the chemical signatures). Furthermore, P levels in other larger plazas were much lower, suggesting the central market of ancient Chunchucmil likely had people selling food and drinks along with other household items. Yet, a lack of P and other elements can also be informative. For example, at the Preclassic site of Xtobo, chemical analysis was undertaken at a large circular plaza (5 ha area called the Xtabay group), that configurationally hinted at the possibility of its function as a marketplace. However, given the low amounts of P (as well as Zn), it is unlikely that food was prepared and consumed in this area (Anderson et al. 2012), an activity typical of marketplace activity.

The use of other elements to supplement P analysis has become common practice in archaeology. This is usually done through ICP-MS and ICP-AES, where the former is better suited for heavier ions (i.e., elements at the bottom right of the periodic table) and generally more sensitive to trace elements. The latter, on the other hand, is better suited for alkali metals and alkaline earth metals (i.e., elements at the top left of the periodic table) (Holliday and Garnter 2007). Middleton and Price (1996:678) found elevated levels of Ca and a strong positive correlation between K and P in areas of nixtamal production. Additionally elevated levels of K from wood ash has been used as a proxy for food preparation (Schuldenrein 1995; Wells 2004). In geochemical studies from Dust Cave, high Sr/Ca ratios from soils have been used to identify diets rich in plants, fish, and nuts (Homsey and Capo 2006). Plant ash is also associated with Na, Mg, Ca, K, and P, and ethnographic accounts indicate Na and K as ash (especially potash) can be remnants of ritual burning events like the use of incensarios (LeCount et al. 2016:459). Areas of high Hg enrichment have been associated with cinnabar, a pigment used in burials and other rituals that imbue the object with metaphorical blood (Cook et al. 2006; Hutson and Terry 2006). At Cancuen the distribution of jade debitage closely parallels that of Hg enrichment implying the use of cinnabar in craft production (Cook et al. 2006:636). Elevated metals like Pb have been shown to be associated with craft production, and high levels of Fe have been associated with agave processing (in conjunction with elevated P concentrations) and hematite, which is often used in ritual settings for bodily adornments (Holliday 2004; Rothenberg 2014:122). Various heavy metals (e.g., Ti, Fe, Cu, Zn and Hg) have also been associated with pigment production (LeCount et al. 2016; Terry et al. 2004); however, extreme caution should be applied so that we do not see pigment production with every elevated level of heavy metals that we come across. As always, other lines of evidence should accompany these statements.

In general, multi-element analysis is a wonderful supplement to P with regard to food preparation/consumption, diet, and other activity areas associated with organic matter. However, activities that used inorganic materials can only be identified through elements beyond P. Archaeologists need to use these other elements with caution but they offer great promise to the archaeological toolkit.

Sampling Design and The Nature of Spatial Data

Unlike other statistical applications or data sets, collecting spatial data violates several statistical assumptions, such as independence, linearity, and normality. Tobler's Law is a fundamental component of spatial analysis and also the source of many of the statistical “problems” associated with statistically modeling spatial phenomena. Simply put, Tobler’s Law states that, “everything is related to everything else, but near things are more related than distant things” (Longley et al. 2010:101). Tobler’s Law also implies there is a distance-weight of paired observations in what is referred to as spatial autocorrelation (SAC). Wells (2010) suggests using a hexagonal lattice sampling strategy is better than using a square lattice because it decreases the distance between adjacent samples, which, in turn would allow for more accurate interpolations. Moreover, Wells (2010) suggests using a “nested sampling regime” can help reduce variance of positively SAC samples while simultaneously increasing the variance of samples located at further “stages”; in effect, this “balances” SAC such that samples can be considered independent and the “nuisance” of SAC can be circumvented (Wells 2010:217). Wells method effectively tacks between scales or high- and lower-order connections in order to outstrip spatial dependence. Thus, for a “high density” sampling strategy (>1% of sample universe) one should use a lattice matrix, ideally a linked-nested hexagonal matrix in order to reduce bias, decrease lag distance, and better “balance” SAC variance. On the other hand, for a “low density” sampling strategy (<1%), Wells suggests using a random sampling strategy (not amenable to kriging).

In order to minimize SAC and variance and to maximize interpolation accuracy, 50 cm x 50 cm shovel tests were placed across the Central Plaza with off-set 5 m spacing in order to form a hexagonal matrix (Figure 6.24). With this configuration, each observation has the potential to have six paired observations of equal distance as opposed to only four with regular square arrangement. Again, the greater number of paired observations, the lower the variance, the more accurate interpolation between measured observations, and the greater ability to minimize SAC. This hexagonal grid began at UTM point 0276719, 2341515 (arbitrarily given the point 40,40 on the gird) at its southwest corner and extended 35 m to the north and 40 m to the east (the arbitrary point 75,80 marking the northeast extent of the gird); it was oriented to magnetic north (Figure 6.24). Where present, samples of plaster floors were taken using a clean trowel and placed in a new, 4 oz Nasco Whirl-Pak. In some areas of the plaza as many as six plaster floors were noted. Shovel tests were dug according to cultural stratigraphy (i.e., the presence of floors) when present or by 30 cm arbitrary levels if floors were not present. All recovered artifacts were also bagged and later analyzed to better understand chronology and the use of space.

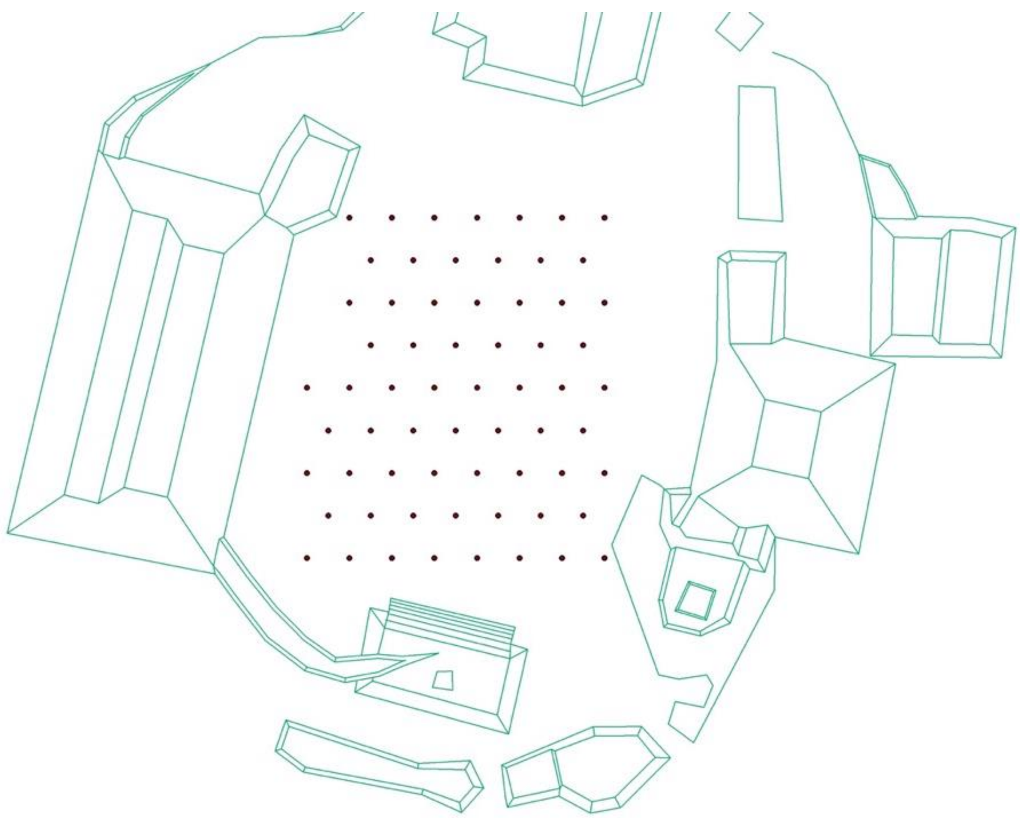

Figure 6.24. Central Plaza with locations of shovel test in grid. Each dot represents a 50 x 50 cm shovel test

In total 127 plaster samples from six different floors were collected with an additional 27 samples taken of soil where no flooring was present from a total of 64 test pits. Munsell colors were taken for all plaster samples, and colors ranged from white to pale orange yellow to pale yellowish pink to very pale brown. However, due to budgetary restraints 40 samples of Floor 1, 32 samples of Floor 2, and 22 samples of Floor 3 were sent to E. Christian Wells at the University of South Florida for inductively coupled plasma-mass spectroscopy (ICP-MS). For the specifics of laboratory methods see LeCount et al. (2016:457-458); however, in short, a 1.00 g sample of the plaster floor was ground, mixed with 0.16-molar nitric acid (a mild acid extraction) in a vial, and then shaken at 220 rpm for 30 minutes. These samples were then decanted into a clear vial after passing through filter paper, diluted with deionized water, and analyzed using a Perkin Elmer Elan II DRC quadrupole inductively coupled plasma-mass spectrometer at the Center for Geochemical Analysis at the University of South Florida. The data show <5 percent variation on the NIST CRM (U.S. National Institute of Standards and Technology Certified Reference Material) for all standards and samples (including replicates), and <5 percent error on internal quality control (blanks), which indicates the samples are not contaminated. Since these samples derive from dolomite [$CaMg(CO_3)_2$] concentrations of Ca and Mg are naturally elevated and not the result of anthropogenic factors. Plasters are also high in aluminosilicates [Al_2SiO_5], so elevated levels of likely the result of the composition of clay minerals in plaster and not the result of anthropogenic impacts.

Geochemical Results from Three Plaster Floors Across the Central Plaza

All results were rendered using ArcGIS. Areas of increased concentration are indicated by the color red whereas areas of decreased concentration are indicated by the color blue. Thus, areas of significantly increased concentration are referred to as "hotspots", while areas of significant decreased concentration are referred to as "coolspots".

Floor 1, the most recent plastering episode in the Central Plaza, shows evidence of significant increased concentrations as well as decreased concentrations of elements clustered around the east to southeast part of the grid. Around this area, there are "hotspots" of K, Na, Ti, Hg, and Fe in addition to "coolspots" of Sr and P. Correlated increased concentrations of K and Na, as seen in Figure 6.25 and Figure 6.26, are associated with woodash, possibly from a hearth (Middleton and Price 1996; Wells 2004:77). Given the discrete distribution of these concentrations, a burn episode is likely the most parsimonious explanation.

As will be discussed below, an instrusive Late Classic burial was found 27.5 m to the east and 15 m to the north of the southwest corner of the grid (Figure 6.24). At this location there were a number of high concentrations of metals, most notably Hg, Fe, and Ti. Increased concentrations of Hg (z-score of 2.46) on Floor 1 represented as a round hotspot (Figure 6.27), are likely associated with cinnabar (mercuric (II) sulfide), a red pigment commonly used in Maya burials (Cook et al. 2006; Hutson and Terry 2006; Parnell et al. 2002). The elevated concentrations of Hg likely result from the use of cinnabar as a metaphorical blood for the interred. Significantly elevated levels of Ti (z-score = 3.3) (Figure 6.29) and Fe (z-score = 2.46) (Figure 6.28) are also present in this area. As mentioned below, high levels of Ti are associated with lithic production and elevated levels of Fe have been noted for animal butchering, agave processing, and other pigments (Cook et al. 2006:636; Manzanilla and Barba 1990; Rothenberg 2014:122).

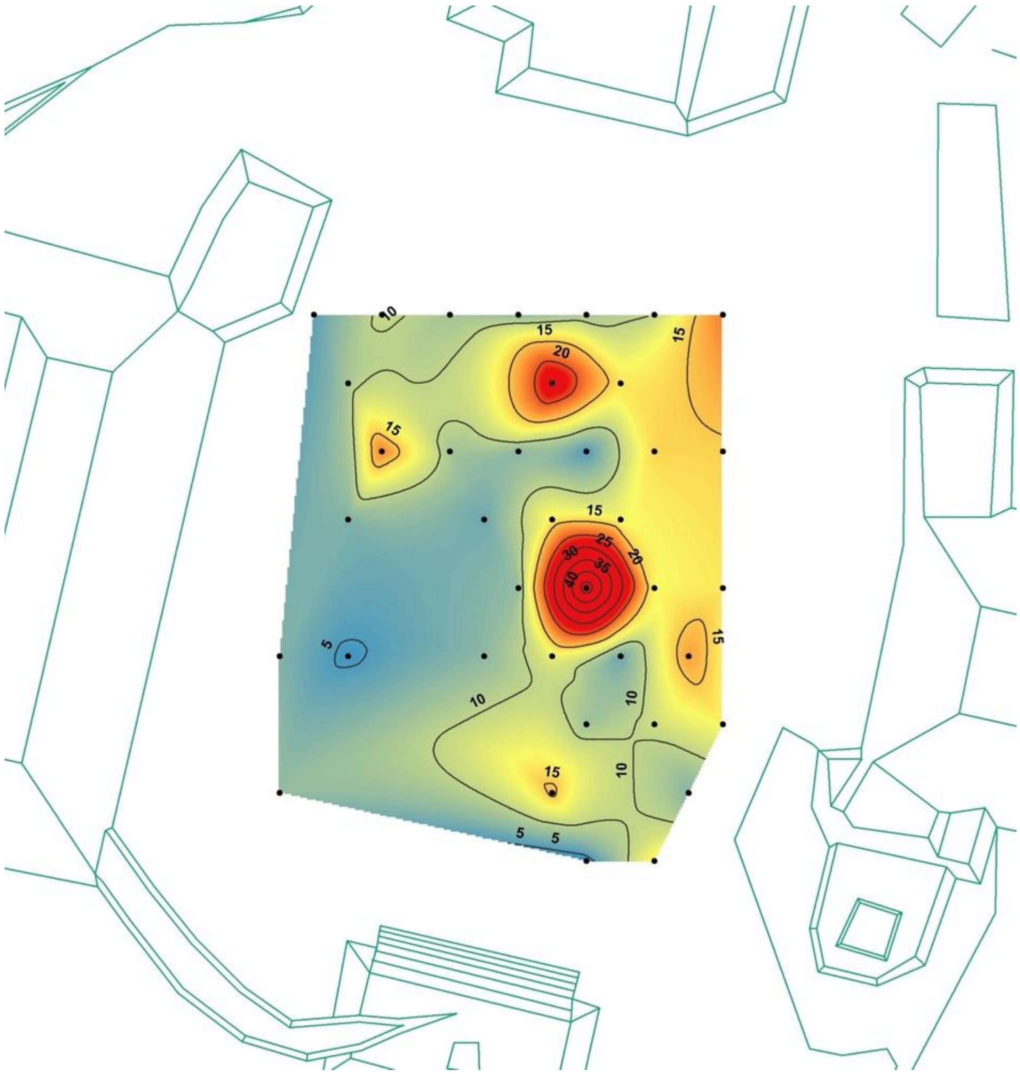

Figure 6.25. Concentrations of K on Floor 1, natural neighbor each contour 5 ppm.

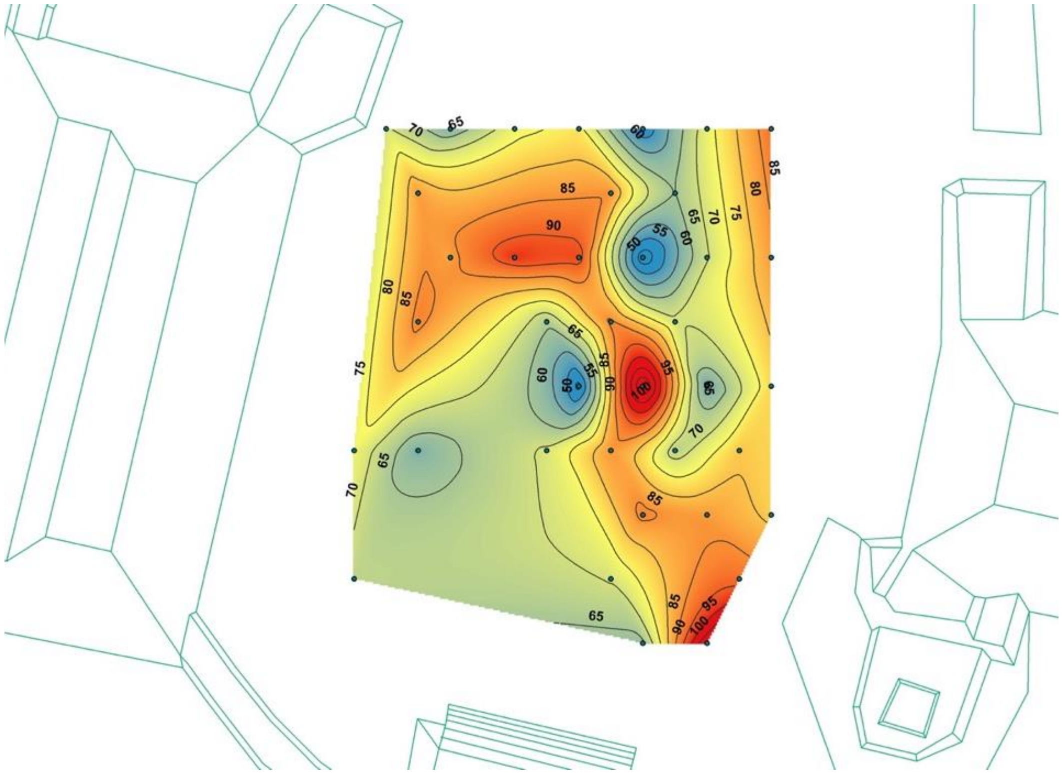

Figure 6.26. Concentrations of Na across Floor, natural neighbor, each contour is 5 ppm

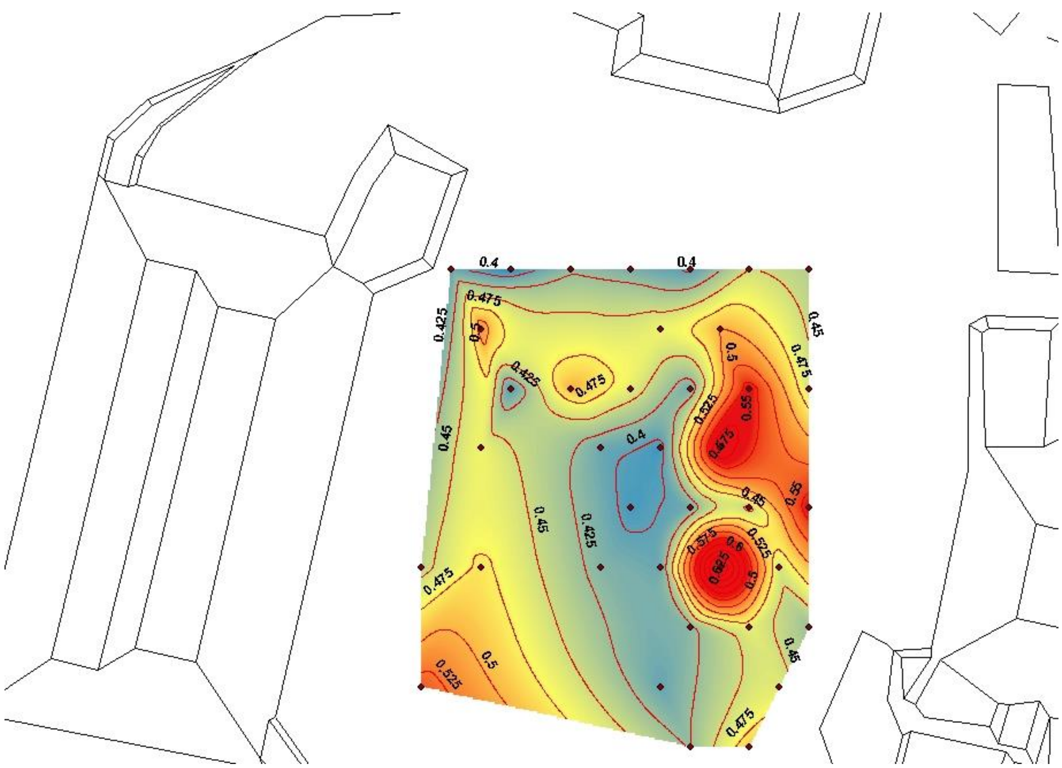

Figure 6.27. Concentrations of Hg on Floor 1, natural neighbor each contour 0.025 ppm.

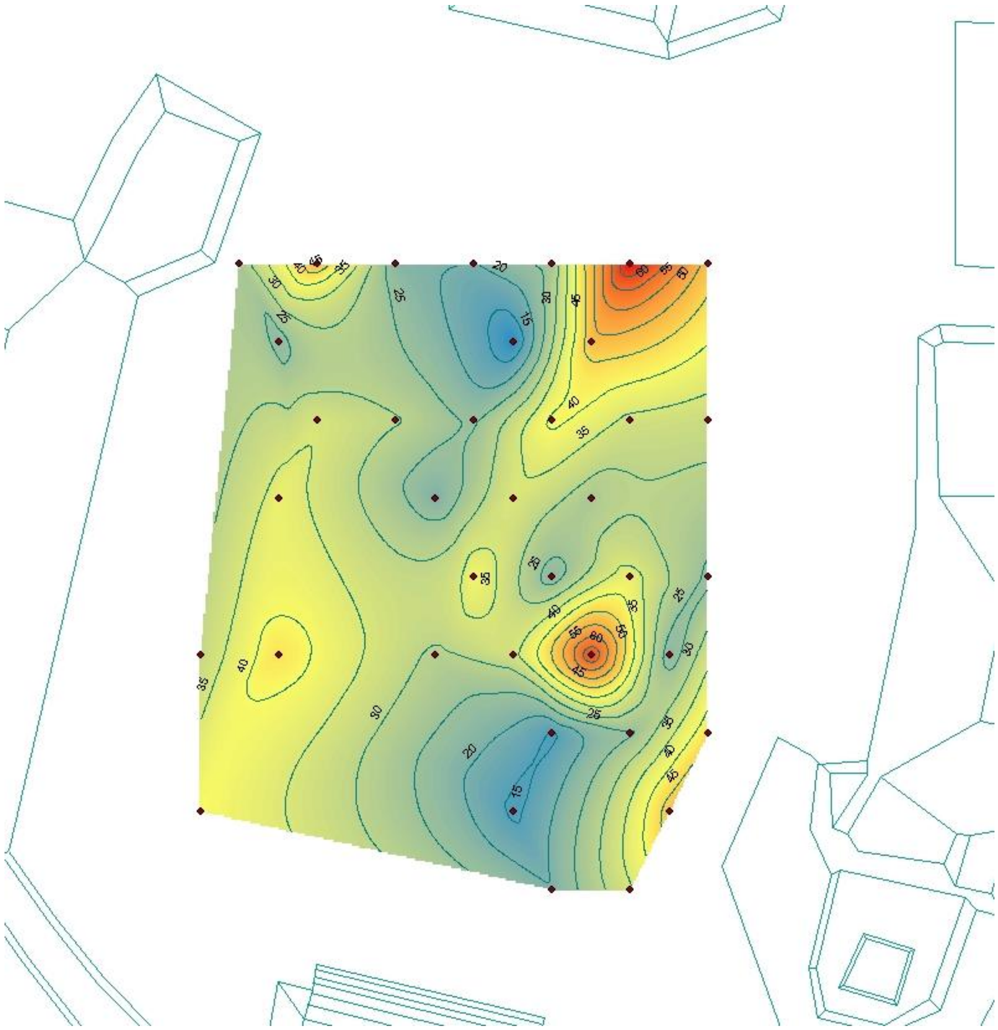

Figure 6.28. Concentrations of Fe on Floor 1, natural neighbor each contour 5 ppm.

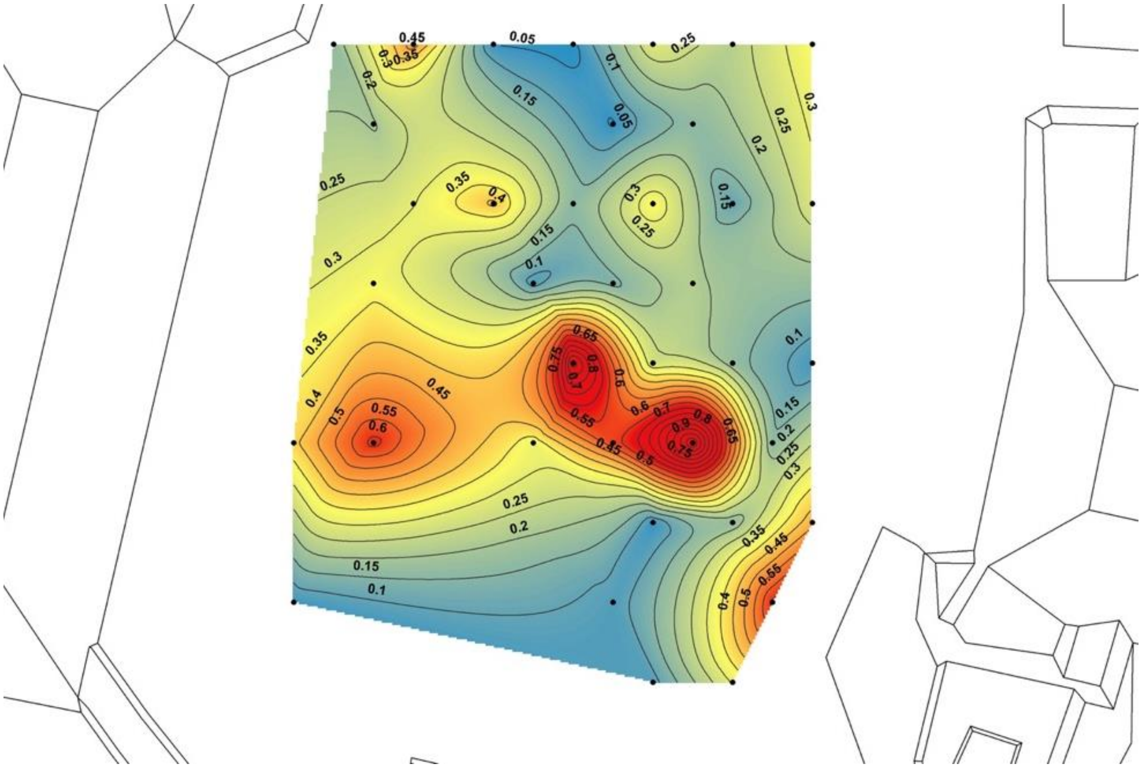

Figure 6.29. Concentrations of Ti on Floor 1, natural neighbor each contour 0.05 ppm.

The elevated distribution of P (Figure 6.30), Sr (Figure 6.31), and Na (Figure 6.26) in multiple non-discrete areas across Floor 1 suggests that food preparation or consumption likely occurred in several locations. As mentioned above, P hotspots are also strongly associated with food preparation. Interestingly, the hotspots of P are located near the perimeter of the plaza and more spatially associated with architecture, suggesting the possibility of food preparation and consumption co-occurring with a monumental background (Figure 6.30). Notably in the extreme southeastern corner of the grid, the concentrations of P and Na (as well as Ti) are rather discrete and elevated, likely indicating an activity associated with nearby Str. 148.

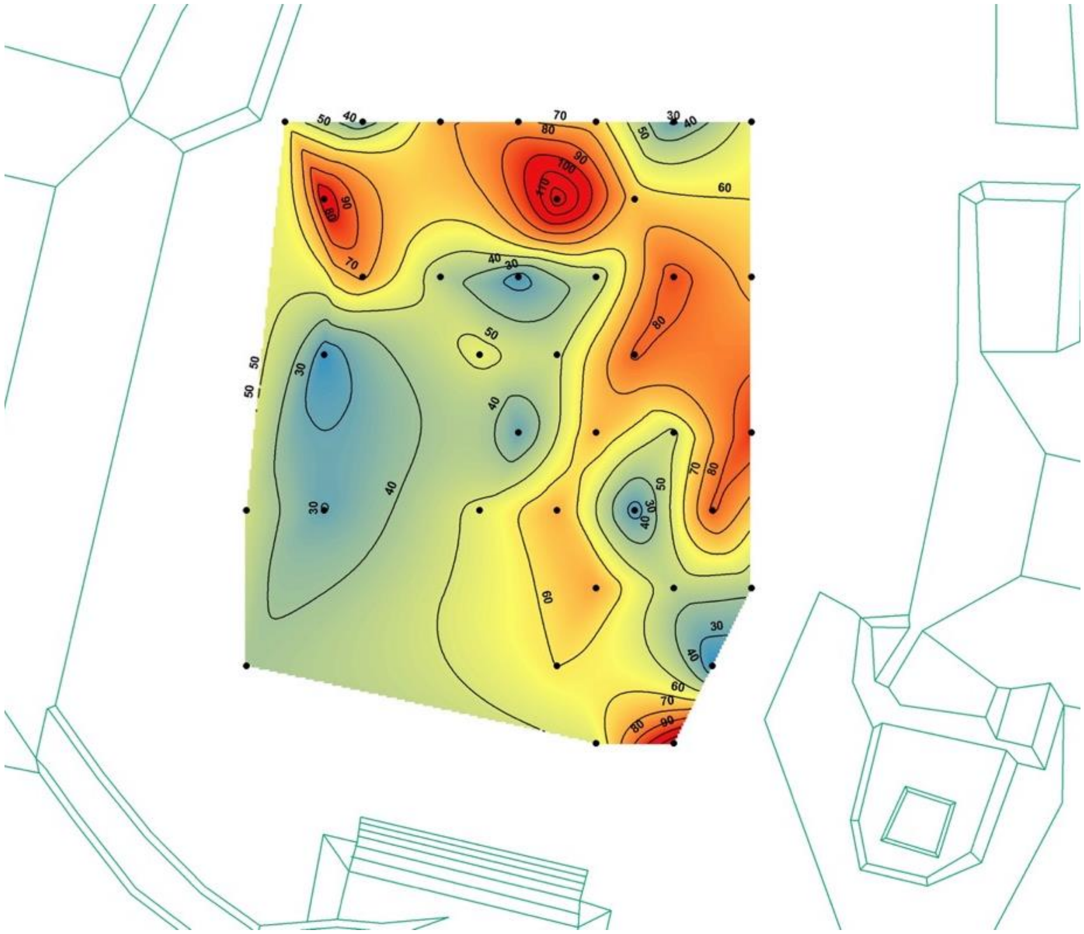

Figure 6.30. Concentrations of P on Floor 1, natural neighbor each contour 10 ppm.

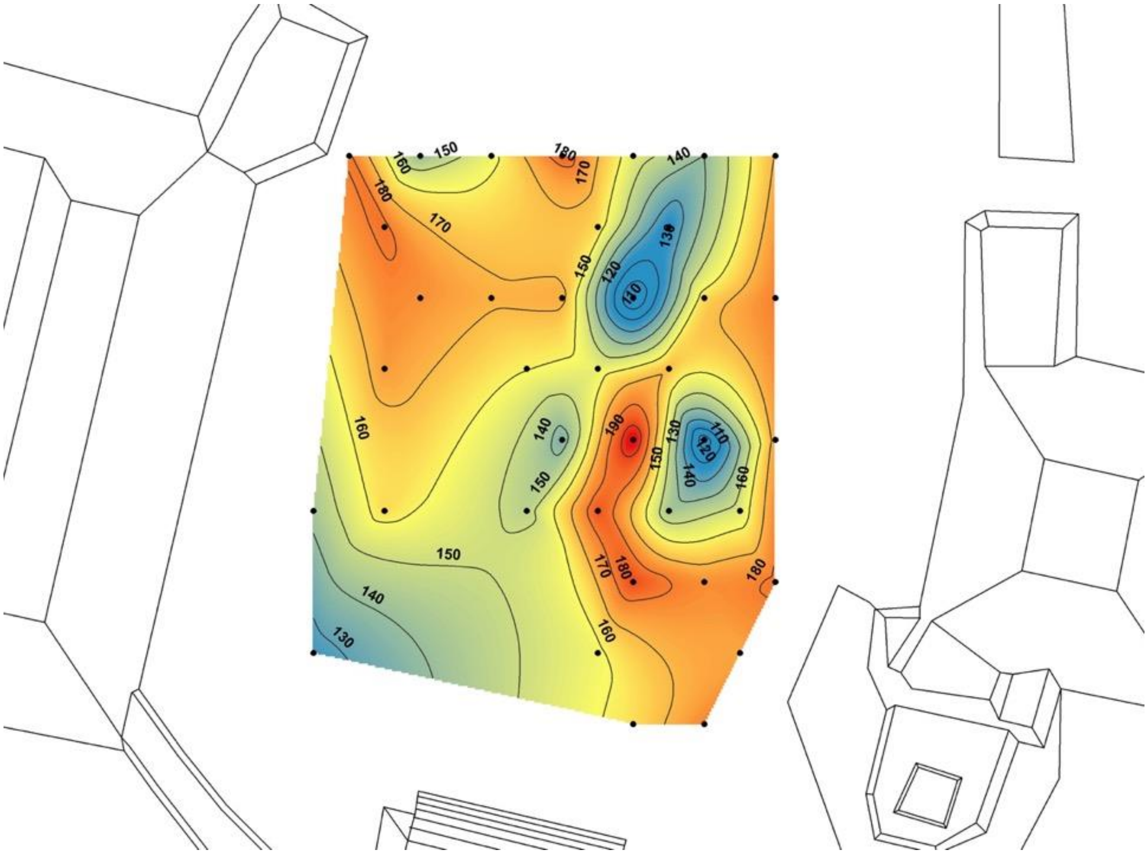

Figure 6.31. Concentrations of Sr on Floor 1, natural neighbor each contour 10 ppm.

The distribution of K concentrations shifts overtime across the Central Plaza. In the earlier phases (Floors 2 [Figure 6.32] and 3 [Figure 6.33]), there is a clear hotspot in close proximity to a raised platform (Str. 147a) which is an extension of the western pyramid (Str. 147). Elevated levels of K, especially near the corners and edges of structures, are associated with woodash from food preparation, and discrete distributions can result from incense burning (Rothenburg 2014:126-127; Wells 2004:77). Given Str. 147a's elevated and flat construction and its location next to the northern sacbé, this area might be an ideal stage for the consumption of food and/or the burning of incense, the latter of which is common among the Maya. Billowing incense would have had an experiential impact on a procession of people entering the Central Plaza from the northern pyramid (Str. 151). The use of incense during processions was documented ethnohistorically by Landa (Tozzer 1941:140) during the Wayeb in which priests purified idols. Archaeological and epigraphic evidence show that burning incense was an important component of not only feeding deities but also opening liminal portals through which oracular divination between the living and ancestral planes could occur (Freidel et al. 1993; Schele and Miller 1986). The act of burning also had transformative properties with regard to partition space and animating the built landscape (Rice 1999; Houston and Stuart 1998). While no copal or incense caches were uncovered, the pattern of elevated K concentrations near this monumental building is possibly the result of repeated processions in which food, incense, or ash was deposited near this building.

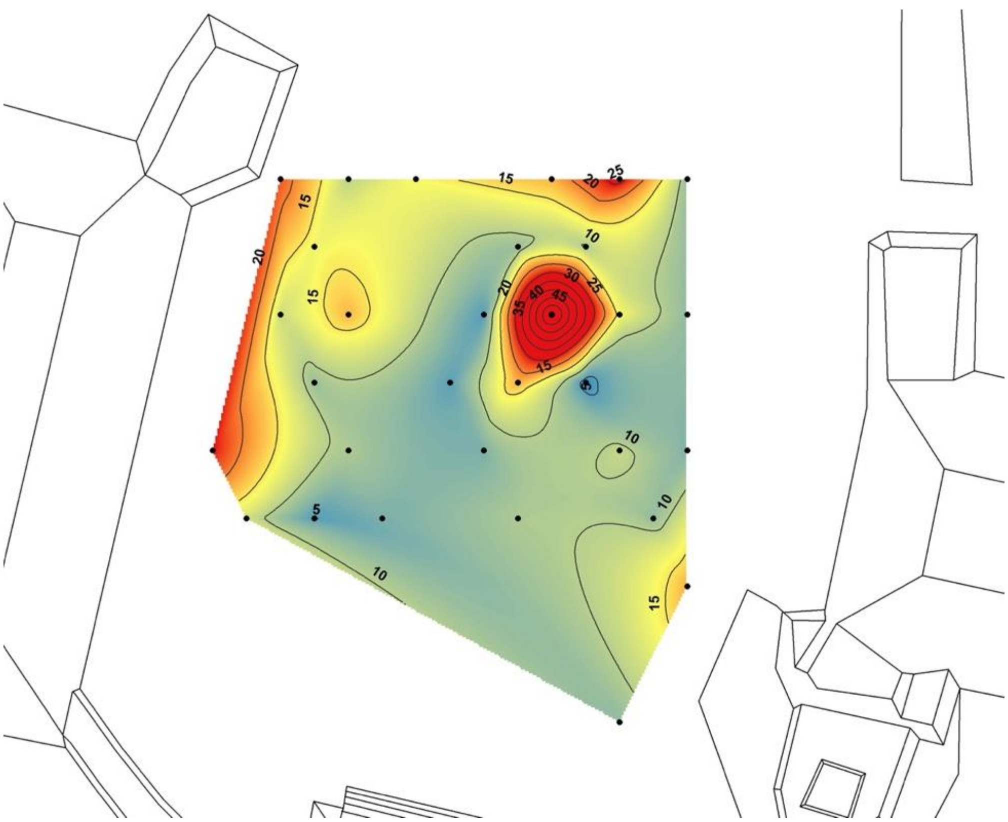

Figure 6.32. Concentrations of K on Floor 2, natural neighbor each contour 5 ppm.

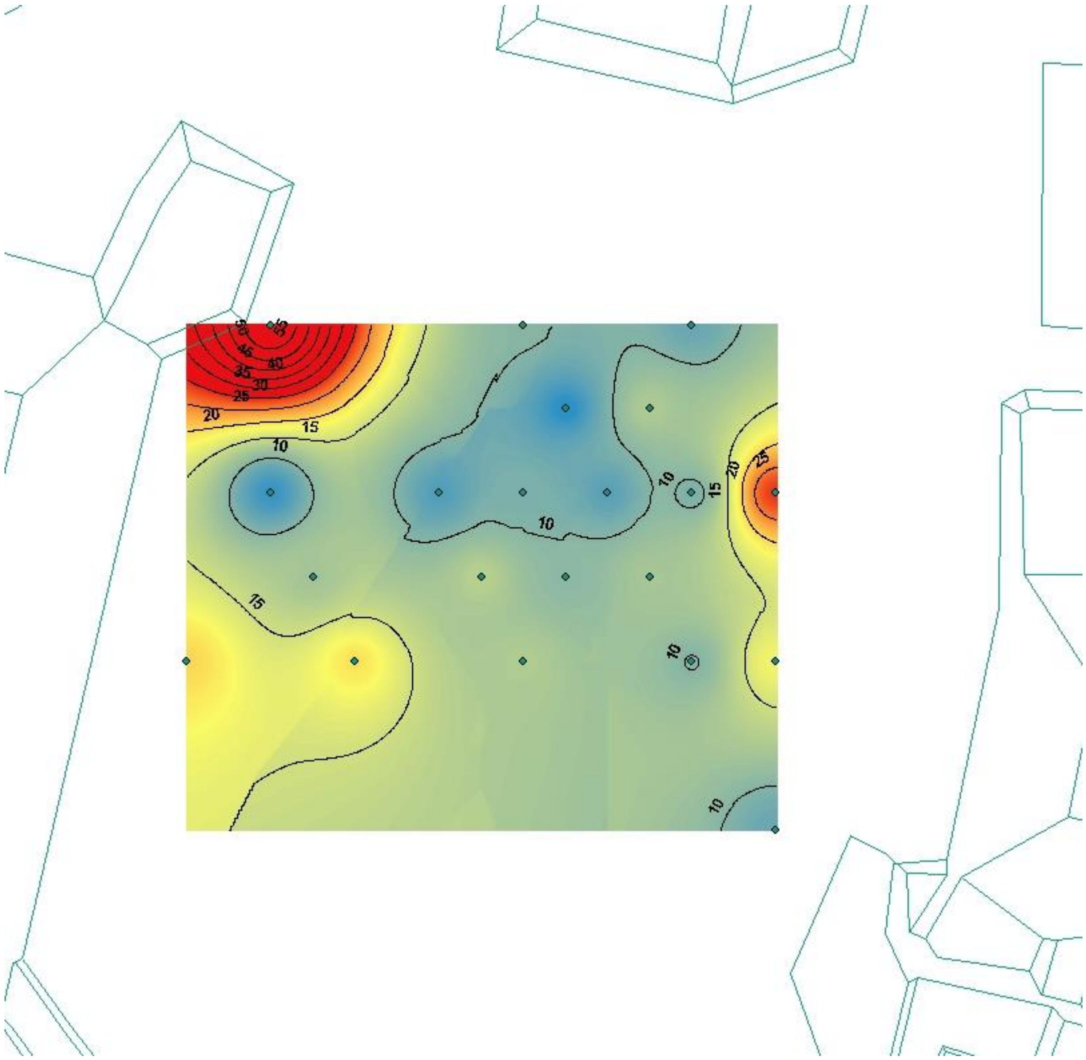

Figure 6.33. Concentrations of K on Floor 3, inverse distance weighting, each contour 5 ppm.

The distribution of heavy metals and other elements across Floor 2 indicates several discrete activity areas. On Floor 2, several elements with high concentrations are spatially associated with Str. 147. At sample 47.5, 65, directly in front of Str. 147, the metals Cu (Figure 6.34), Fe (Figure 6.35), Ti (Figure 6.36), and Pb (Figure 6.37) all have significantly elevated concentrations (z-scores >1.96). There is also a hotspot of Na (Figure 6.38) and K (Figure 6.32) at this location. Additionally, Cu, Fe, and Ti all have high discrete concentrations in the northeast part of the grid at sample 70, 70 on Floor 2. The distributions of Na and P (Figure 6.39) across Floor 2 are similar to that of Floor 1 insofar as they are relatively well distributed across the Central Plaza in less-discrete patterns than the aforementioned heavy metals. This pattern of Na and P distribution implies food preparation occurred at several locations across the plaza.

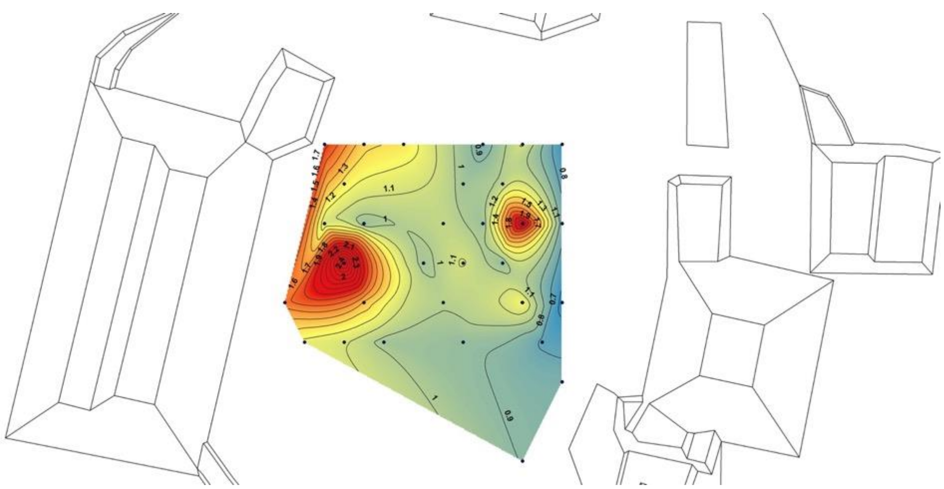

Figure 6.34. Concentrations of Cu on Floor 2, natural neighbor each contour 0.1 ppm.

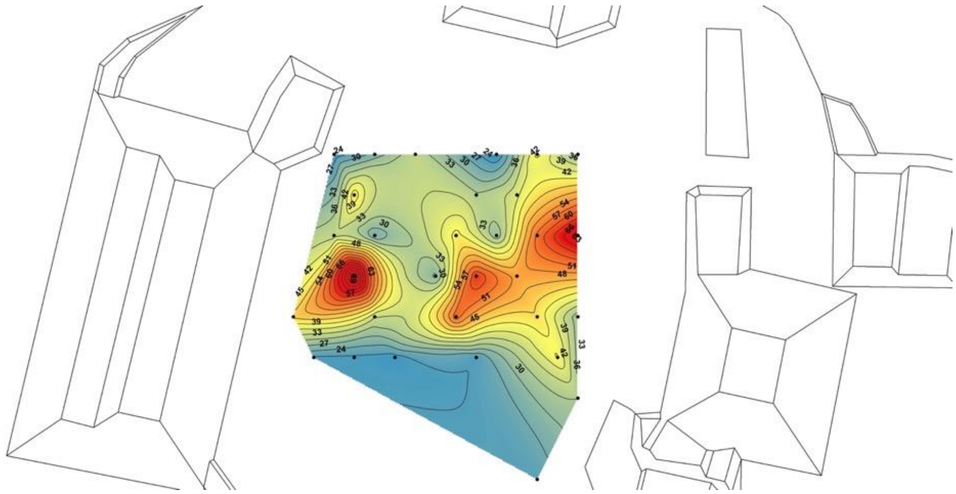

Figure 6.35. Concentrations of Fe on Floor 2, natural neighbor each contour 3 ppm.

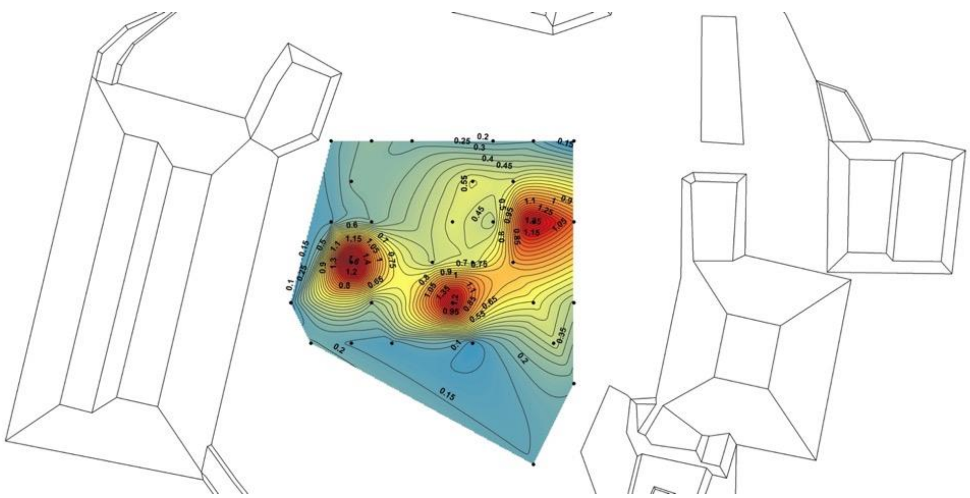

Figure 6.36. Concentrations of Ti on Floor 2, natural neighbor each contour 0.05 ppm.

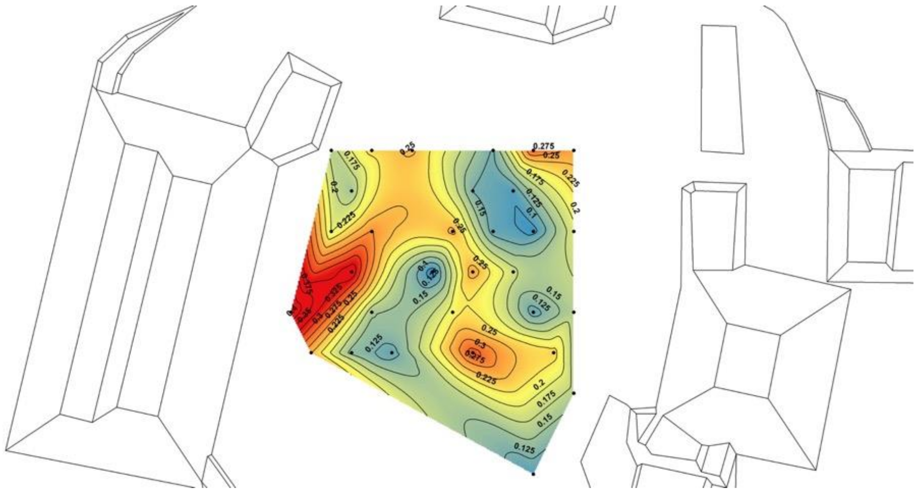

Figure 6.37. Concentrations of Pb on Floor 2, natural neighbor each contour 0.025 ppm.

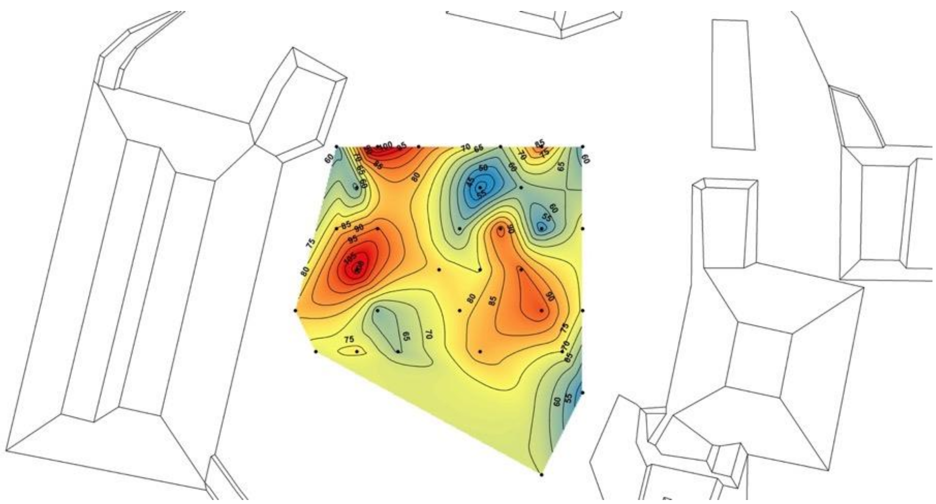

Figure 6.38. Concentrations of Na on Floor 2, natural neighbor each contour 5 ppm.

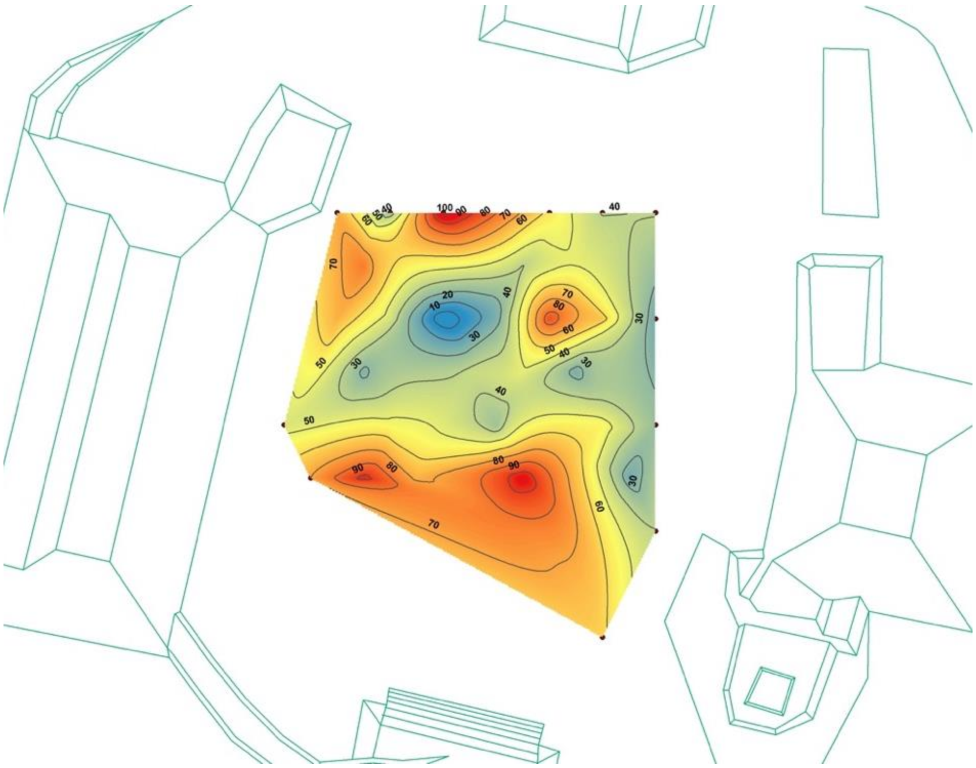

Figure 6.39. Concentrations of P on Floor 2, natural neighbor each contour 10 ppm.

Heavy metals from Floor 3 exhibit a correlated clustering at shovel test 50,60, which is located in the western part of the plaza roughly in the centerline of Str. 147. Hotspots of Cu (Figure 6.40), Hg (Figure 6.41), Fe (Figure 6.42), Ti (Figure 6.43), and Pb (Figure 6.44)—all with a z-score above 1.96—are all present at this spot on the plaza. Indeed, the values for these elements are all several orders of magnitude greater than the next highest concentration and only peak at this location. The concentration of Fe (282.100 ppm) and Ti (8.199 ppm) in this area of Floor 3 are exponentially higher than these elements for any other floor (z-score <4.3 for both): the next highest concentration for Fe is <79 ppm and <1.8 ppm for Ti. Al concentrations are also extremely elevated (1734 ppm compared to 563 ppm as next highest). Interestingly, this spot also has the lowest value for P from all Floor 3 samples. Elevated concentrations of Fe, Ti, and Al have been associated with phenocrysts of volcanic glass from obsidian manufacturing (Wells 2004), although no tools or debitage were found. Mineral-based pigments from hematite, ilmenite, and limonite, all of which were used in rituals throughout Mesoamerica, also exhibit elevated concentrations of Fe and Ti (Wells 2004:77). There is also a peak in Pb concentration at this point (Figure 6.44); however, it also shows hotspots elsewhere whereas the aforementioned elements do not.

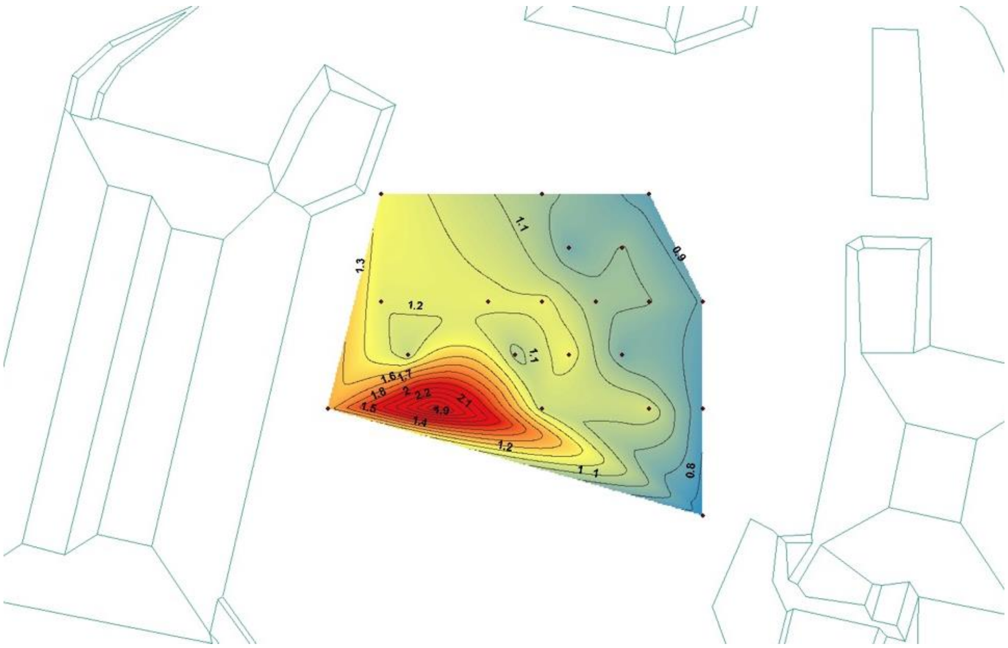

Figure 6.40. Distribution of Cu on Floor 3 using natural neighbor modeling with isopleth contours equally 0.1 ppm.

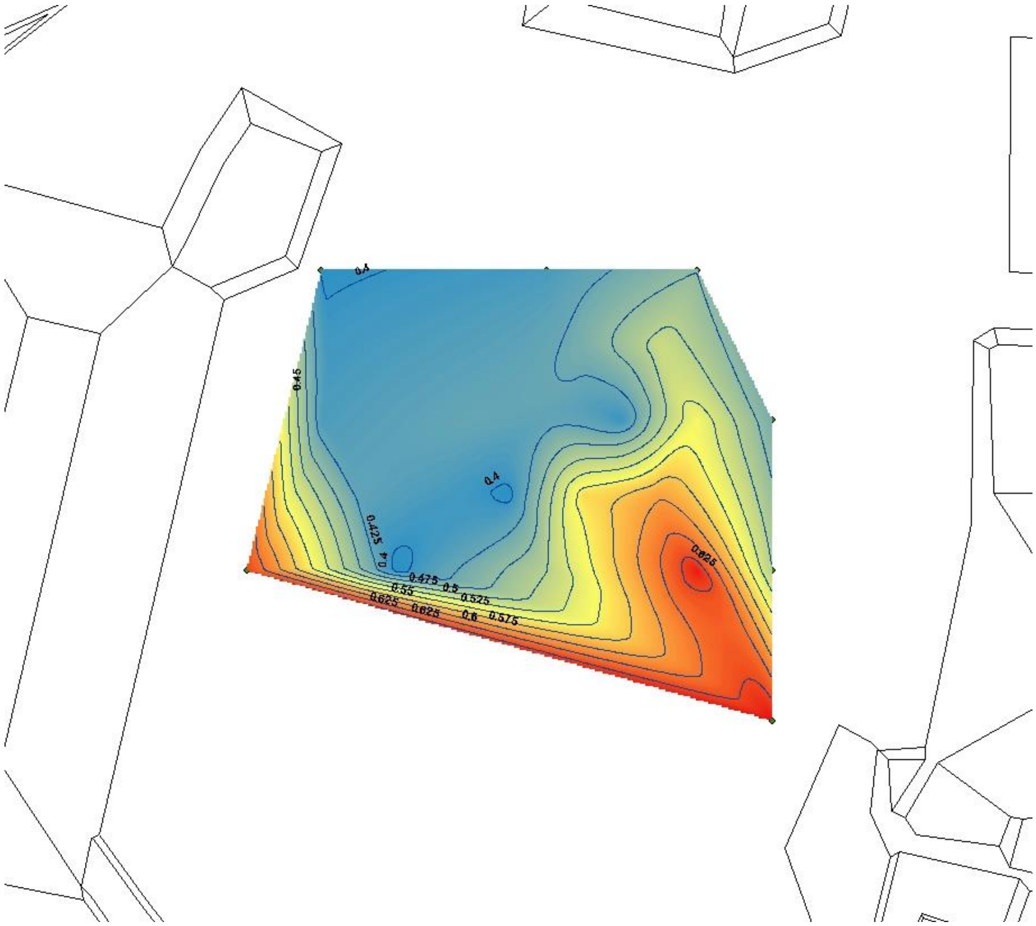

Figure 6.41. Concentrations of Hg on Floor 3, natural neighbor each contour 0.025 ppm.

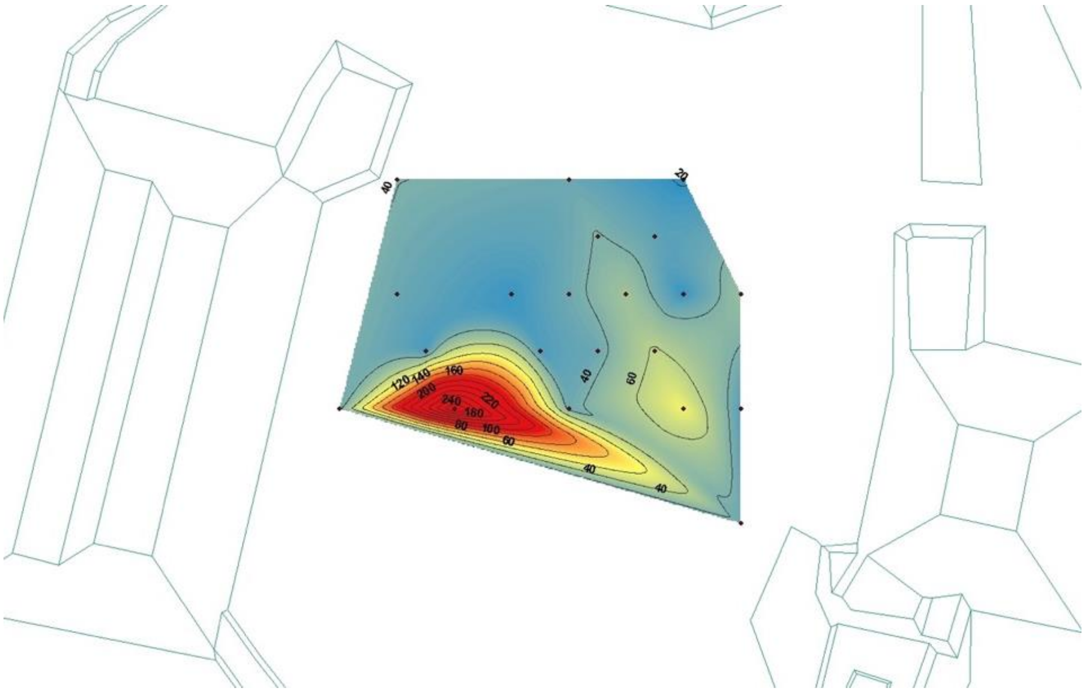

Figure 6.42. Distribution of Fe on Floor 3 using natural neighbor modeling with isopleth contours equally 20 ppm.

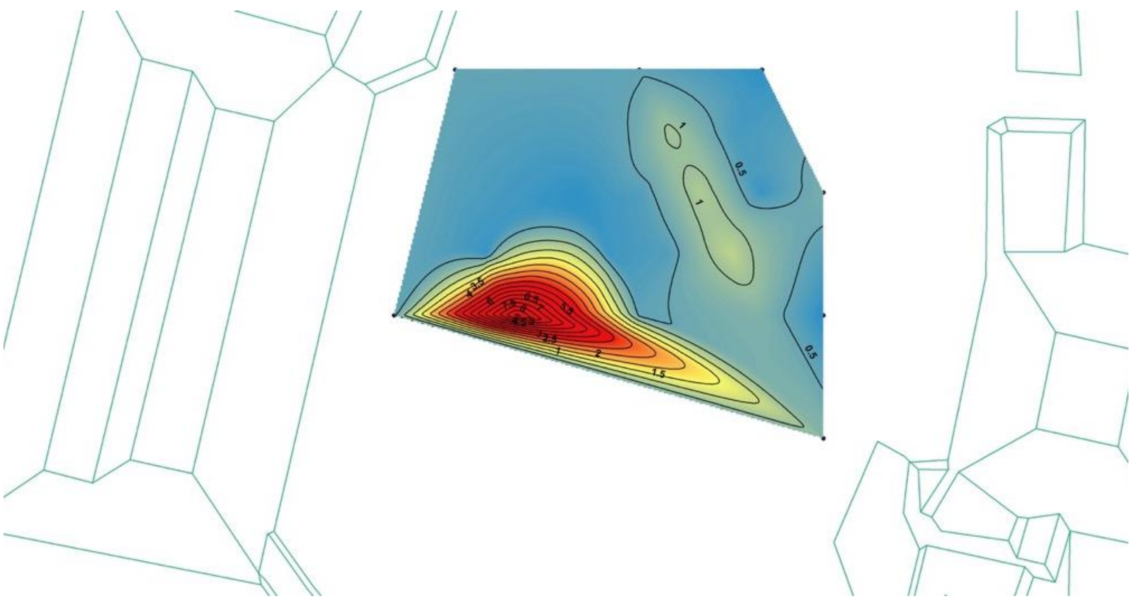

Figure 6.43. Distribution of Ti on Floor 3 using natural neighbor modeling with isopleth contours equally 0.5 ppm.

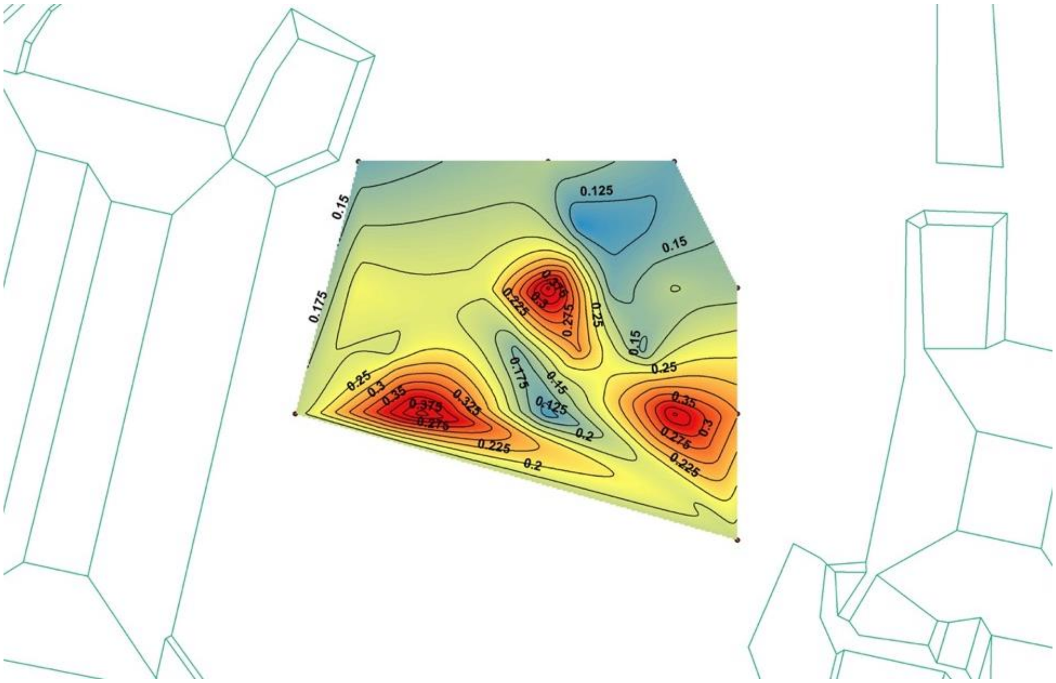

Figure 6.44. Distribution of Pb using natural neighbor modeling with isopleth contours equally 0.025 ppm.

Late Classic Burial: Changing Claims of Space in the Central Plaza

In the process of collecting plaster floor samples, a crypt burial was encountered in shovel test 15 m north and 27.5 m east of the southwest grid corner only roughly 30 cm below the surface Figure 6.45a). The east-west aligned crypt consisted of four tabular capstones, a series of vertically set rocks that formed the perimeter and another series of tabular stones that formed the bottom of the crypt (Figure 6.45b), The burial disturbed the floor series seen elsewhere in the plaza and, therefore, was likely intrusive to this construction episode (Figure 6.46). The individual was poorly preserved, yet two well-preserved Late Classic vessels were recovered. A Sacalum plate was placed over the head of the extended individual, who faced east, and a Chablekal Chicxulub Incised plate was placed over the feet (Figures 6.47 and 6.48). Unfortunately, the state of preservation did not allow for age estimates or sex identifications as only parts of the cranium and some teeth were recovered.

Figure 6.45. (a) Capstones of cyst from Burial 1 Op. 3E. (b) Perimeter and bottom of cyst from Burial 1 after remains and artifacts were removed.

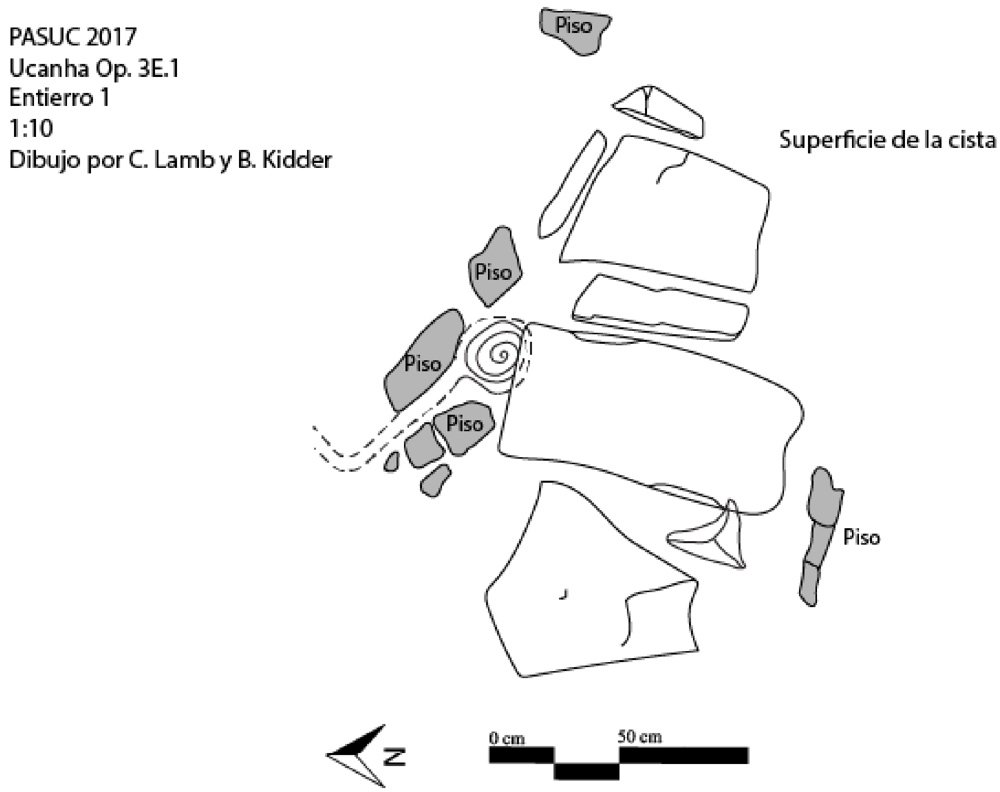

Figure 6.46. Drawing of capstones showing fragments of floor (piso) around cyst.

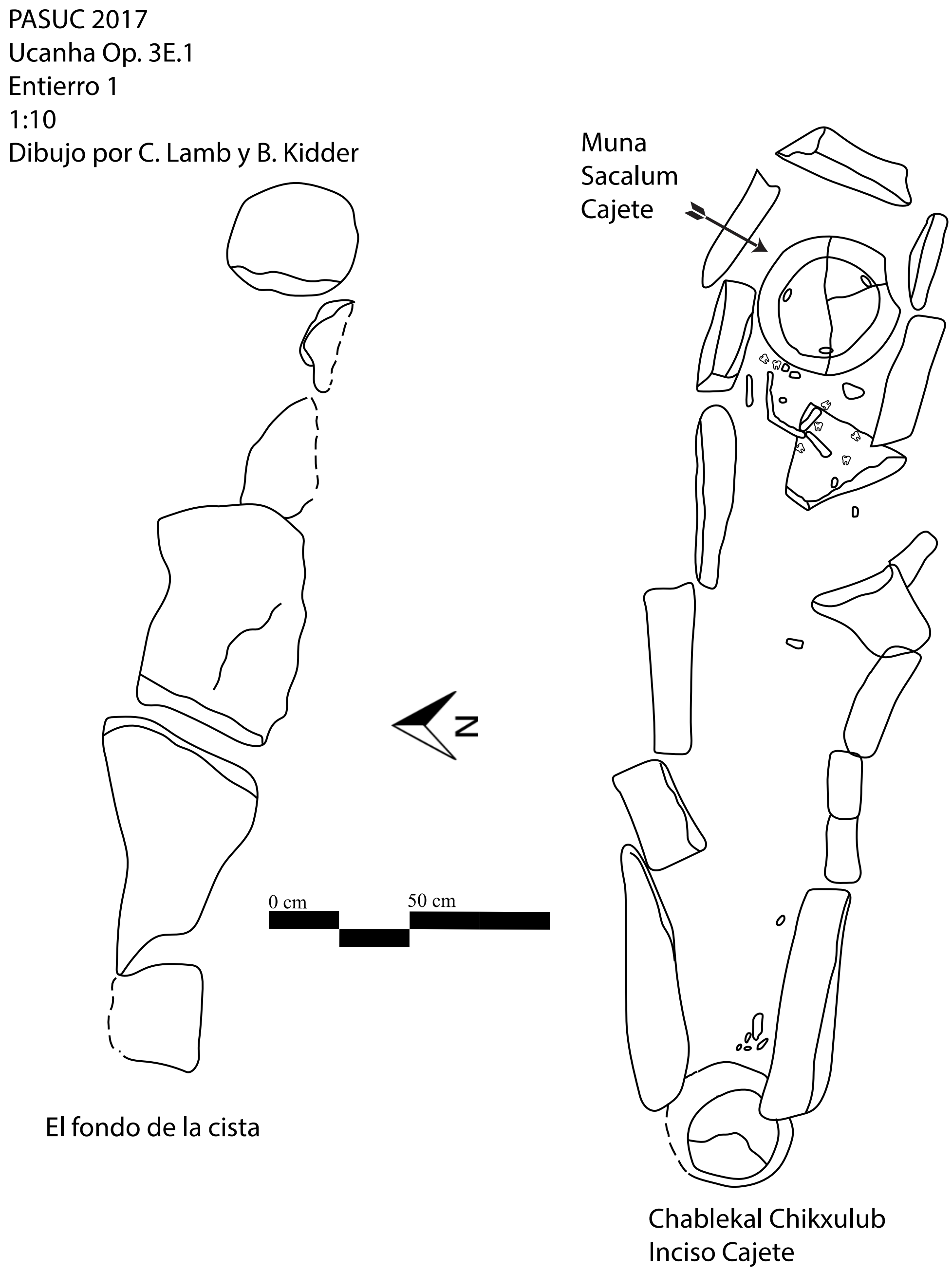

Figure 6.47. Drawing of bottom of cyst (left) and outline of cyst with vessels and fragments of bone shown (right).

Figure 6.48. Picture of cyst with vessels and bones shown.
Taken facing east (left). Close up photo of Sacalum vessel covering face (upper right) and close up cranial fragments with vessel removed (lower right).

Nevertheless, this burial does suggest changes in claims of access to the Central Plaza during the Late Classic. Among other social claims, burials make statements—often publicly and through great pomp in grand space such as this—that interred ancestors thereby grant the living rights to this space (McAnany 1995). In many ways, the performances that accompany burials, especially ones in more public settings that were likely witnessed by not just immediate family but possibly by members of the larger community, would have been important anchors in the social memory of the people present (Hutson 2010). Furthermore, the ability of a kin group to have the right to burial an individual in place that once served as a fulcrum of community formation through a seemingly more collective ideology is a social distinction that was not present during the Late Preclassic (at least no evidence was found). As mentioned elsewhere, Aruthur Joyce's work in Oaxaca recounts a similar shift in centralized plaza access from a community-centered place of bring together the hoi polloi through feasting and other integrative practices during the Late Preclassic to a more individualized place of elite machinations and identity manifestations by the Classic period.

Ceramics from Operation 3E

In total 448 sherds were recovered and 387 were identifiable by Type-Variety. Of these, Late Preclassic sherds predominate with significant numbers from the Late Classic and the Middle Preclassic (Figure 6.49). As seen from other contexts as well, the elevated presence of Middle Preclassic sherds—at least compared to other household contexts—shows the Central Plaza was a place with a deep history of meaningful attachment to the community of Ucanha.

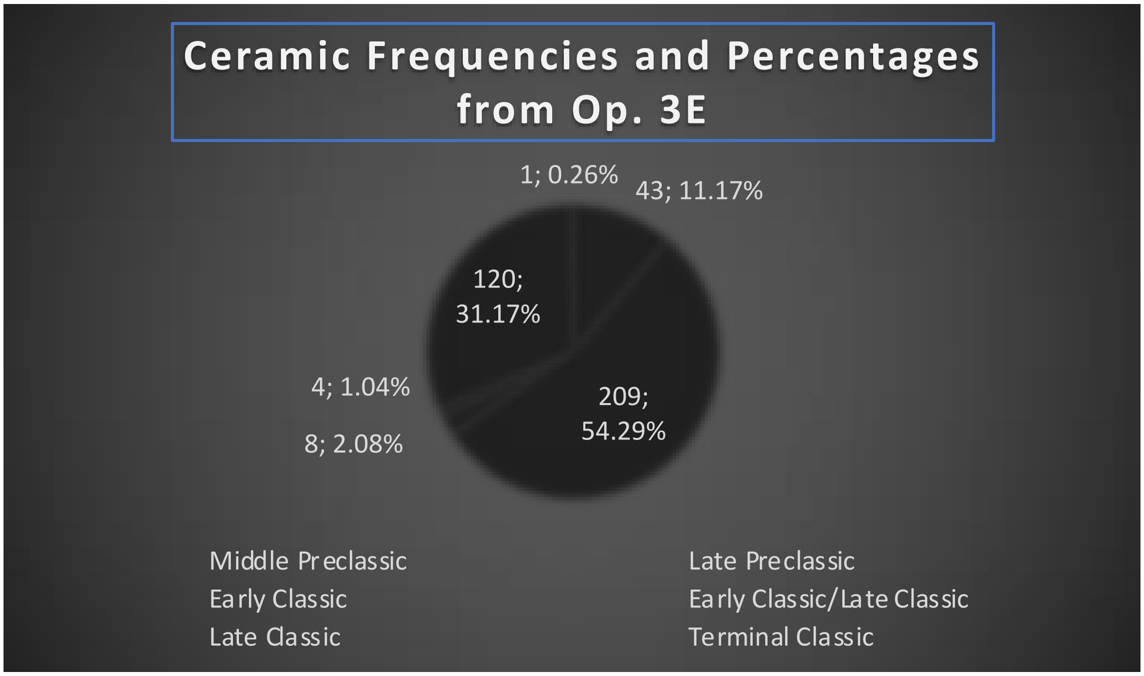

Figure 6.49. Counts and percentages of ceramic sherds recovered from Op. 3E according to time period.

Ceramic samples also helped to parse out floor construction chronology. In some shovel tests, ceramics were recovered between floors from sealed deposits. While only 24 sherds from between floors were recovered, they all date to the Late Preclassic, except for eight Middle Preclassic sherds (three Joventud Nolo and five Unslipped Saban) of Floor 1 and 2 in unit 3E.65,70-2 and one Saban Becoob (Early Classic) between Floor 1 and 2 in 3E.45,70-2. Sherds recovered from between Floors 2 and 3 and between Floors 3 and 4 in all other contexts date to the Terminal Preclassic. From contexts below the series of floors, 50 sherds were recovered with all of them dating to the Terminal Preclassic or earlier. In some areas not all five floors were preserved and in one context (3E.65,70) a total of six floors were found. From contexts above the series of floors, 94 sherds were recovered; of these 62.77% (n = 59) date to the Late Preclassic, 34.04% (n = 32) date to the Late Classic with one sherd from the Middle Preclassic (Joventud Nolo) and two sherds from the Early Classic (Saban Becoob) also present. While plaza areas are argued to have been kept clean in antiquity (Hutson and Terry 2006; Rothenberg 2014:121), some ceramics were indeed left above the living surface.

Ceramic Attribute Trends from the Central Plaza

As discussed in chapter two, attribute analysis can help identify specific consumption patterns. For example, larger ceramic vessels (>28 cm in diameter) found in contexts that afford larger-scale gathering, are arguably the result of community-level commensal politics (Wells 2004, 2007). Additionally, more open vessels, such as those with everted or other out-flaring rims, would allow for the visual presentation of consumables to be augmented and more impactful to participants (Junker 2001; Welch and Scarry 1995).

In total, 37 sherds from all contexts in the Central Plaza (Op. 3) underwent attribute analysis. Specifically, this includes Carolina (n = 1), Dzilam Verde (n = 3), Huachinango (n = 1), Hunabchen (n = 1), Polvero Lechugal (n = 1), Maxcanu (n = 1), Oxil Unslipped (n =1), Shangurro (n = 4), Sierra Red Unspecified (n = 1), Timucuy (n = 3), Tipikal (n = 1), Unto (n = 2), and Xanaba Red (n = 17). Of the service vessels, 15 had large enough preserved rims to measure rim diameter. Of these 15, thirteen were classified as cajetes or unrestricted unspecified vessels with seven measuring 30 cm or larger (two were over 40cm), five measuring 27 cm or more, and one measuring 19 cm. Of the vessels having a rim diameter of 27 cm or larger, six of them had outcurving or everted rims that would have highlighted the visual aspect of food consumption. The largest five service vessels were all Xanaba with two East Coast wares (Carolina and Huachinango) also measuring over 30 cm. The site average for unrestricted, plain Xanaba rim diameter is 29.96 cm (n = 211, σ = 7.734); therefore, these two rims over 40 cm in diameter are roughly 2 standard deviations larger than the site average. Indeed, all unrestricted, plain Xanaba rims with a diameter 40 cm or greater come from monumental and/or integrative nodes on Ucanha's built landscape, including the Palace (Str. 92), the Central Plaza, the large southern pyramid (Str. 1), and Operation 8. There were not noticeably more serving vessels compared to cooking vessels, however. While no faunal remains were recovered, the presence of the largest ceramics does seem to correlate with either larger-scale commensal politics. Interestingly, the largest vessels are Xanaba Red, which lack the more ostentatious surface treatments of some of its red-on-orange varieties. Perhaps the use of more austere ceramics was meant to assuage overt materializations of status by using the more quotidian variety thereby taking a common household vessel into a more public realm. Indeed, feasting ceramic assemblages from Middle Formative Izapa, a period of similar emerging hierarchy and newly forming small cities, included rather plain serving dishes in conjunction with smaller fancy dishes, which "were used in the integration of those being served, rather than impressing them by those hosting events where food was served" (Rosenswig et al. 2018:391).

Conclusion

Plazas were critical arenas of social interaction beyond the daily interpersonal communications of the household. These interactions were extraordinary and, thus marked as different, as spaces for improvisation of cultural rules, as new material encounters. Nevertheless, the intelligibly of rituals and its gravitas can be directly tied to its formulaic predictability (Geertz 1957). For the some of the inhabitants of Ucanha, the Central Plaza probably served as a materialization of labor efforts that culminated in a built landscape that centered the cosmos as a literal realization of the community (Stanton and Freidel 2005); its construction memorialized civic pride. Subsequently, the Central Plaza was an area of community-level interactions that would have helped to form a sense of generalized trust, a key facet in the promotion of social cohesion and civic engagement (Golden and Scherer 2013; Uslaner 2000). Given what we know about plazas in Mesoamerica, this Central Plaza, which could accommodate all of Ucanha's Late Preclassic population, likely served a variety of functions: a backdrop for theatrical performances (Inomata 2006b, 2006a); a space for ritual-procession pilgrimage-fairs (Freidel 1981; Ringle 1999); marketplaces for the exchange goods (Dahlin 2009; Hirth 1998; Rice 2009); hosting visitors from neighboring sites in order to negotiate political alliances (Cogolludo 1971; Tozzer 1941:158); an axis-mundi that could channel the divine in ways that simple residential compounds could not (Stanton and Freidel 2005; Tsukamoto and Inomata 2014) and large-scale feasting (Foias 2007; Hendon 2003; Wells 2007, 2004). These face-to-face interactions, especially those of state pageantry, would have allowed for negotiations of power, formations of social networks, and the reinforcement of interdependent subject-follower roles as seen in Houston et al.'s (2003) model of moral authority (see Chapter 2). Finally, ethnohistoric and archaeological evidence suggest community-level plaza encounters would have occurred cyclically in conjunction with important celestial and calendrical events, so people would have come to anticipate (and likely enjoy) these events. These expectations of supra-household interactions would have added to household capabilities through new economic and social opportunities. Yet, constructions around the Central Plaza, especially a wall to the south, shows evidence of elite strategies to control access.

Excavations from Structure 149 highlight its importance on Ucanha's built landscape from the Late Preclassic to the Postclassic. Standing on top of Str. 149's broad platform, which rises 3 m above the surface of the Central Plaza, people would have been able to oversee processions on the northern intra-site sacbé coming from Str. 151, the largest pyramid at the site, and audiences gathered in the main plaza. A plastered megalithic staircase shows this building was in use during the Late Preclassic. The deliberate use of large amounts of plaster as fill associated with a Late Preclassic construction phase likely functioned as an offering of labor and goods associated with earthly deities. While no faunal remains were present and only a couple of rims were found, one Xanaba vessel with a 50 cm rim diameter with bolsters nearly 24 cm high was found, indicating the possible use of massive serving wares at Structure 149 during the Late Preclassic. Unfortunately, ceramic evidence for large-scale feasting is not robust; nevertheless, the small sample recovered suggests ceramics from this context were used to serve food for large numbers of participants.

Geochemical evidence from a series of plaster floors dating to the Late Preclassic helped identify possible activity areas in the Central Plaza. High concentrations of heavy-metals associated with pigment production from Floors 2 and 3 were found abutting a monumental structure on the Central Plaza's west side, while these high concentrations are absent in Floor 1. This pattern suggests the use of the Central Plaza during the Late Preclassic possibly included the production pigment, either as parts of ritual or to paint Str. 147 or both. Evidence from Ucanha and other sites show that monumental buildings were painted in antiquity using a variety of vibrant colors. However, the clustering of several metals associated with pigment production was not present in later flooring episodes, indicating this practice was absent latter in the plaza's history.

Finally, the presence of a Late Classic burial accompanied with high concentrations of metals associated with pigments marks an interesting shift in the use of space and the memorialization of material culture. The presence of an individual in the Central Plaza makes performative claims about authority and ownership of space. Since burials are arguably speech acts that make materialize ownership and focus social memory within points on the landscape (Hutson 2010), rituals that marked the individual stand in contrast to rituals that possibly marked buildings. During the Late Preclassic at Yaxuna, for example, ritual emphasis was placed on an undifferentiated idea of the ancestral past; however, with the emergence of kingship during the Early Classic ritual focuses, especially those associated with previously more "public" space, became more focused on the individual (Stanton and Freidel 2005), a shift that surely mirrors larger social aspirations of social differentiation. Monumentality affords itself to the persistence of memories and larger citations of collective ethos; however, these memories are fleeting and can change given new social context. The interment of an individual in the middle of Ucanha's Central Plaza materializes these new citations of authority over memorialized space.

CHAPTER 7: HORIZONTAL EXCAVATIONS OF STRUCTURES 65, 132, AND 239: DIGGING INTO QUALITY OF LIFE AND SOCIAL DIFFERENTIATION AT THE HOUSEHOLD LEVEL

"[I]nhabited space—and above all the house—is the principal locus for the objectification of the generative schemes; and, through the intermediary of the divisions and hierarchies it sets up between things, persons, and practices, this tangible classifying system continuously inculcates and reinforces the taxonomic principles underlying all the arbitrary provisions." Pierre Bourdieu (1977:89)

As Bourdieu notes, the house, both its material components and its inter-subjectification, makes meaning and forms hierarchies constantly and recursively. Over time from a child to an adult, these generative schemes—these rules and resources—become unassailable truths, thereby molding expectations, such as quality of life and acceptable ways to materialize social differentiation. In this chapter, I will present results from broad scale excavations of three residential platforms (Str. 65, Str. 239, and Str. 132; see Figure 7.1). As discussed in chapter 2, 1) <u>architecture</u>, 2) <u>feasting</u>, 3) <u>diversity of household assemblages</u>, 4) <u>caching/burial rituals</u>, and the 5) <u>use of space</u> are useful variables for analyzing social differentiation at the household level. The materialization of these variables is closely tied to household quality of life (QOL) and general wellbeing. Through these on-mound excavations, I will chronicle social distinction from the Late Preclassic to the Early Classic in order to see whether or not there were noticeable differences in QOL between households. Such differences could have threatened social cohesion. As mentioned earlier, this era at Ucanha is a period of physical and social integration through an appeal to community interaction and ideology, but it also is a time of emerging rulership and new material manifestations of social inequality. Test pitting, for example, indicated some households were more successful at weathering the Early Classic downturn than other households. It is only through more extensive excavation methods that it is possible to assess the presence and degree of some of these variables and how this Preclassic-Classic transition unfolded at the household level.

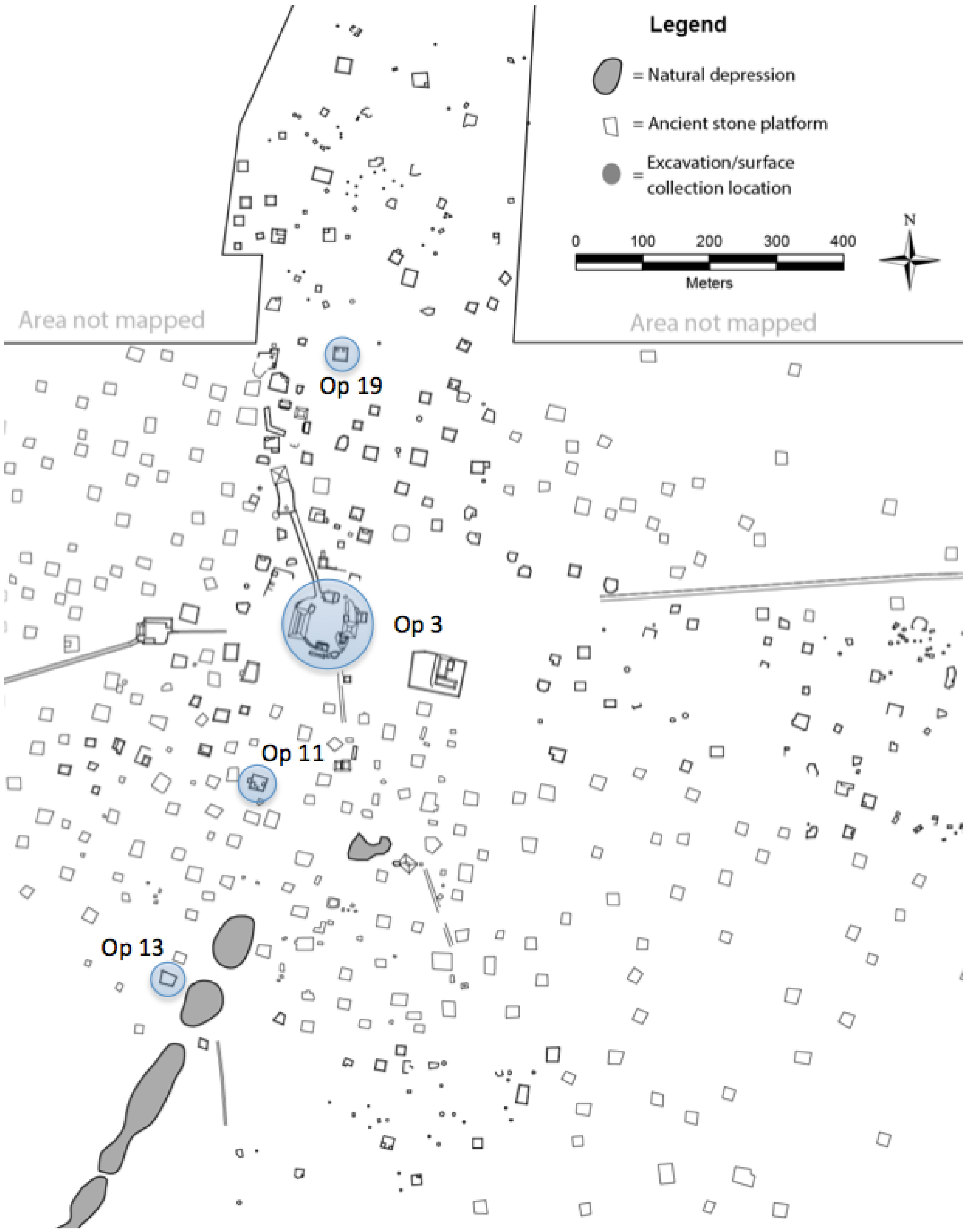

Figure 7.1. Map of Ucanha with operations receiving extensive excavations highlighted in blue.

Methods: Horizontal Excavations and Ceramic Attribute Analysis

Excavation Methods

Based on the results of test pitting, platform size, and distance from the Central Plaza, three architectural compounds were chosen for more extensive, horizontal excavations in order to assess household quality of life and social differentiation across time. First, trenches were placed off architecture and continued on architecture to better understand the number and timing of construction phases. Using the profiles of these units as a guide, subsequent on-mound units would go down to the depth of larger fill seen in these trench profiles. A central datum and other data points tethered to this central datum were used for sub-surface measurements at each operation.

Excavations were done by local, archaeologically-trained residents of Cansahcab, many of whom had several years of excavation experience thanks to the UCRIP project. Screening, collecting, and labeling were the same as methods outlined in chapter 5. Using a datum, the beginning and ending of each lot was measured in the four corners and the center (when possible) and the depth was averaged, which is useful for reconstructing superposition across the operation as well as quantifying the density of artifacts. Sediment texture and Munsell color were also noted. Plan view sketches and pictures documented architectural features, ceramic concentrations, and other cultural phenomena. While excavation units for Str. 65 were labeled as arbitrary numbers, the units for Str. 239 and Str 132 were labeled using two arbitrary numbers to approximate their position on a Cartesian plane with the first number representing “easting” and the second number representing “northing”. For example, if 20,20 was chosen as an arbitrary starting point were a GPS coordinate was taken, then unit 28,22 would be eight meters east and two meters north of this GPS coordinate. Similarly, unit 10,12 would be 10 meters west and 8 meters south of this GPS coordinate.

Ceramic Attribute Analysis

As a result of time and the focus of this dissertation, attribute analysis was completed on diagnostic sherds from only the Late Preclassic and the Early Classic. Diagnostic sherds included any pieces of ceramic that contained a part of a rim, base, or support. Attibute analysis of diagnostic sherds can identify chronologically based variation within groups that span several centuries, such as Sabán, Xanaba, and Sierra (Culbert and Rands 2007; Rice and Forsyth 2004). Rim diameters were measured in order to estimate vessel size and volume since large preparation bowls (>30 cm diameter) are one indicator of feasting (Wells 2007; Potter 2000). As mentioned in chapter 3, the location of flanges on a vessel can provide finer chronology within Protoclassic modes. Different paste recipes can also indicate different production locations, which would augment the social capabilities as socioeconomic networks of a household's quality of life. For this study attributes such as rim form, vessel form, lip form, rim diameter, paste color, inclusions, and slip color were noted (see appendix). Formal attributes for vessel form, lip form, rim type, base form, shoulder form, neck form, and flange type were given a numerical value that correlates to a qualitative observation where observable (Table 7.1).

Table 7.1. Attribute codes used to classify ceramic sherds.

Vessel Form		Rim Type		Lip Type	
1	restricted orifice bowl	1	direct	1	rounded
2	tecomate	2	exterior thickened	2	beveled interior
3	unrestricted bowl	3	exterior bolstered	3	double bevel pointed
4	staight bowl	4	exterior bolstered with scoop	4	beveled exterior
5	outcurving bowl	5	everted	5	tapered
6	vase	6	everted thickened	6	tapered exterior
7	cazuela	6a	everted thickened double grooved	7	tapered interior
8	jar	6b	everted thickened double beveled	8	grooved
9	comal	7	outcurving	9	squared
10	unrestricted orifice unspecified form	8	outcurving thickened		
10a	unrestricted bowl unspecified	9	flange		
11	restricted unspecified	10	double bolstered		
12	composite silhouette				

Base Type		Flange Type		Shoulder Form		Neck Type	
1	Planar	1	Labial	1	rounded	1	outcurving
2	Concave	2	Medial	2	angled	2	vertical
3	Convex	3	Basal			3	straight divergent
4	Anular						
5	Supports						

For all operations, including Str. 92 (which is a large palace-like structure) 578 diagnostic sherds from the Late Preclassic to the Early Classic underwent attribute analysis. From the operation associated with Central Plaza (Op. 3), which was discussed in chapter 6, there were 35 diagnostic sherds. From the horizontal excavations that will be discussed in this chapter, there were 261 diagnostic sherds. All types in groups Aguila, Carolina, Dzilam Verde, Flor, Huachinango, Hubila, Iberia, Oxil, Percebes, Polvero, Saban, Shangurro, Sierra, Timucuy, Tipikal, Tituc, Unto, and Xanaba underwent attribute analysis.

Operation 11/Structure 65

Str. 65 is located 260 m southwest of the center of the Central Plaza and had a volume of approximately 1,000 m^3, making it the largest platform investigated. Additionally, it had the greatest number of bichrome varieties (8) as well as the greatest number of overall ceramic varieties for the Late Preclassic, both of which indicate its elevated QOL. Based on test pitting results, Str. 65 was chosen for more extensive broad-scale excavations for a variety of reasons: 1) the ceramics recovered dated overwhelmingly to the Late Preclassic period (87.75%) with seemingly little Late Classic overburden (8.00%); 2) it had the highest architectural volume as well as the most diverse ceramic assemblage from the Late Preclassic, suggesting a highly elevated quality of life during this period; 3) this structure contained a number of ceramics with protoclassic experimentation, thereby giving the opportunity to further study this ceramic phenomenon; 4) the presence of superstructures afforded study of how geochemical analyses can help identify uses of space; 5) it was close (0 – 250 m) to the center of the site, which is important to see if closeness correlated to wealth as seen in studies of urbanism (Carmean 1991; Chase and Chase 2004; Folan et al. 2009). Collectively, I expected this structure to have many, if not all, of the five variables of social distinction.

Figure 7.2. Planimetric map of Str. 65 with units numbered and stone alignments highlighted in gray.

From the units excavated in the image above, the chronology of Str. 65 is drastically different than what was suggested by ceramics recovered from off-mound test pits. On-mound excavations reveal the most heavily occupied time period was the Late Classic (Figure 7.3), while ceramics from test pits overwhelmingly dated to the Late Preclassic (85%). Furthermore, the presence of a Postclassic occupation is unique: no other on-mound, horizontal excavations recovered a single Postclassic potsherd.

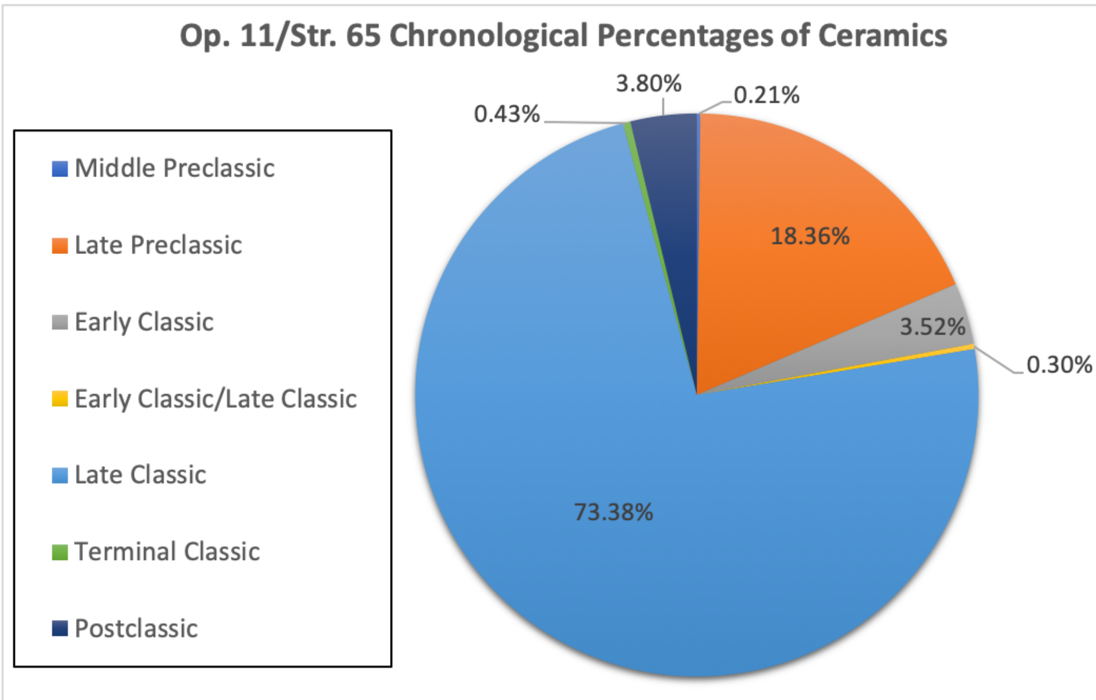

Figure 7.3. Chronological percentages of ceramics recovered from horizontal excavations of Str. 65.

Trench Units

In order to better-understand the construction sequences of Str. 65, a trench was placed perpendicular to a stone alignment on the south side of the structure and just north of the southwest corner of the structure. The southern trench consisted of four contiguous

2 x 2 m units (11.C1 – 11.C4) and the western trench consisted of three contiguous 2 x 2 m units (11.C48 – 11.C50); see Figure 7.2.

Southern Trench

On the surface there appeared to be an edge of the basal platform, so the trench went in front (11.C1 and 11.C2 were off-mound) and behind it (11.C3 and 11.C4 were on-mound). The first level in all units was black, organic-rich "*boox lu'um*" soil (10 YR 2/1). In level 11.C2-2, the face of the southern wall began to be exposed and fragments of flat stucco, measuring 2 – 5 cm in thickness, were found. Given that these pieces of stucco were found "off-mound" it is possible parts of the wall were covered with stucco. As levels continued down further exposing the wall face, the soil became more smooth (sandy silt) and lighter in color (10 YR 4/2). Additionally, this exterior wall of the southern basal platform consisted of two courses of stones, including sculpted pillow-shaped megalithic stones that were over 50 cm in length (Figure 7.4). This exterior wall, Wall 1, was placed directly on bedrock.

Figure 7.4 Exterior megalithic wall (Wall 1) of southern trench. Photo taken facing north.

Behind Wall 1 stood Wall 2. In order to preserve the exterior wall, only a small portion of the interior wall was exposed. This interior wall had the same orientation as the exterior wall and also contained one large megalith (Figure 7.5). Other stones were tabular and stacked up to three courses high. Considering the relative closeness of these walls, their similar orientation, and similar cobble-sized fill between the walls (Figure 7.6), it is likely the interior wall (Wall 2) was a construction pen or brace for nicer exterior wall (Wall 1).

Figure 7.5 Overhead view of dual wall construction in southern trench. Photo taken facing south.

Unit 11.C4, the northernmost unit in the trench, exposed part of semi-circular architectural feature that was on-mound. With the on-mound units, larger fill rocks appear at roughly 40 – 45 cm below the surface, with usual mixed fill sequence down to bedrock (100 to 130 cm below the surface). Based on this knowledge, future on-mound units went down roughly to the start of the larger fill sequence at roughly 45 cm below the surface.

In the first levels of all four units, 439 identifiable sherds were recovered, and they dated from the Middle Preclassic to the Postclassic. The vast majority dated to the Late Classic (332 or 75.6%) and included the usual Cehpech ceramics (Muna, Teabo, Ich Canziho) as well as nicer types within the Muna group (Tekita and Sacalum). Potsherds from a Chablekal fine gray vase and a Ticul cajete were also found. Only 8.8% of ceramics from the first levels dated to the Late Preclassic; however, Huachinango, Laguna Verde, Flor crema were noted.

The context between the two walls produced a mixed deposit of roughly equal numbers of sherds form the Late Preclassic, Early Classic, and Late Classic. The penultimate level outside of the both walls produced a similar mix. However, the last level outside of the wall in the lighter soil just above bedrock included only Late Preclassic ceramics.

From the contexts inside of the two walls, level 11.C3-2 consisted of smaller cobbles locally referred to as *ch'iich'* and levels 11.C3-3 and 11.C3-4 consisted of larger fill stones. From 11.C3-2, 36 of the 69 identifiable sherds were from the Late Preclassic, 14 sherds dated the later part of the Early Classic, and 12 to the Late Classic. From the larger fill contexts, 23 of the 34 were Late Preclassic including a protoclassic variety of Xanaba called Chunchen Incised. Fewer than four sherds each from the Middle Preclassic, Early Classsic, Late Classic, and Postclassic were also present. In the second level of the northernmost unit 11.C4-2 Late Classic and Postclassic pottery dominated the assemblage. However, within the fill levels again the Late Preclassic is the most prevalent (56% of assemblage, 28 sherds), with the number of Protoclassic types including Shangurro (n = 14) and Laguna Verde (n = 2).

Interestingly, the ceramic trends are almost inverted from patterns seen in off-mound test pitting. From contexts closer to the surface, there is a significant Late Classic component as well as the largest amount of Postclassic seen thus far at non-monumental contexts at Ucanha. Given that the majority of the ceramics from the fill contexts are Late

Preclassic and that the walls were constructed in the megalithic style, it is likely this platform wall was constructed during the Late Preclassic.

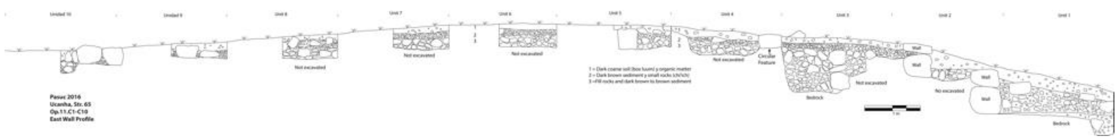

Figure 7.6 Profile of trench and units that cross of Str. 65 / Op11. Facing east.

Western Trench

The trench placed on the western side of Str. 65 also uncovered a series of two walls with a similar orientation, yet there is more space between these two walls. In the context between these two walls (down to the second course of stones of the inner wall and basically level with the outer wall), there are fill rocks and below that a more grayish brown (10 YR 4/2 to 7.5 YR 4/2) and smoother sandy silt (Figure 7.7). It is likely these two walls are an extension of Wall 1 and Wall 2 seen in the southern trench. In this matrix, 96.88% (124 of 128) of the identifiable sherds dated to the Late Preclassic. Within these there was a noticeable Terminal Preclassic/Protoclassic assemblage, including three types within the gorup Shangurro (Chango, Shangurro, and Interior Striated), four varieties of Xanaba (Pixoy, Incised, Chunchen, and Chunchen with a painted floral design), Flor (Mateo), and Dzilam. Attribute analysis from one of the Shangurro sherds also indicates the presence of a medial flange, which is a composite silhouette form associated with Protoclassic I (75 BCE – CE 150) (Ancona Aragón et al. 2013:96) . Since this context was inside the outer-most wall, it is likely the outermost part of the basal platform was constructed during the end of the Preclassic period. As is the case with other portion of the wall, the exterior wall (Wall 1) is comprised of several nicely rounded megaliths, while the interior wall utilizes smaller stones. The stone of Wall 2 are articulated and stacked intentionally, however they are not as well-sculpted and stacked as Wall 1 (compare Figure 7.8 and Figure 7.9). Therefore, it is likely Wall 2 is functioning as a brace.

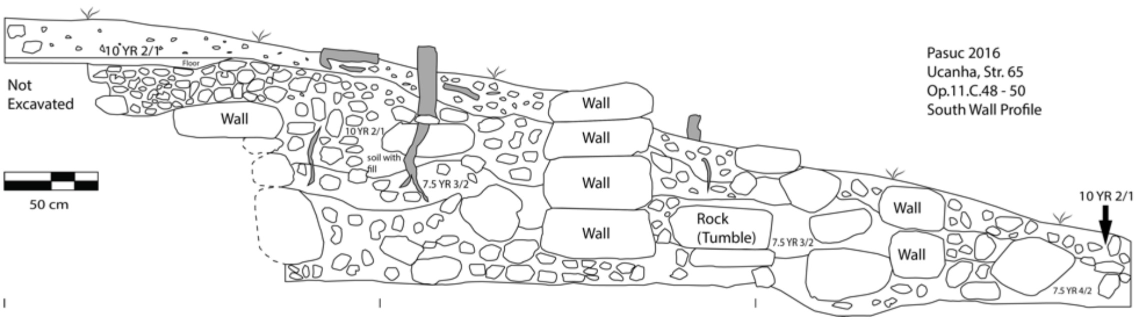

Figure 7.7. Profile of Str. 65 / Op11 units C48 – C50. Facing south.

Figure 7.8. Interior wall or construction pen in southwestern trench. Photo taken facing east.

Figure 7.9 Exterior wall of trench on southwest side of platform. Photo taken facing east.

At the close of the first level of 11.C48, part of a poorly preserved floor (0.72 m^2) was present beneath a stone alignment (Figure 7.10). A small medial fragment of an obsidian prismatic blade was found just above this floor. Continuing below the floor, which was roughly 4 cm thick, 36 sherds were recovered with eight dating to the Late Classic and 28 from the Late Preclassic. Given the ceramic trends from other on-mound excavations, it was likely that this floor was constructed during the Late Classic. Additionally, below the floor, there was another linear feature with a similar orientation as the two walls. Digging between this linear feature and the interior wall of C11.49, the matrix has smaller fill rocks than between the walls in 11.C49 and 11.C50; however, the final level before bedrock (90 cm – 120 cm) the matrix is a grayish brown sandy silt, which is similar to the last levels above bedrock both in between the interior and exterior wall and outside the exterior wall.

Figure 7.10. Piece of poorly preserved floor under rock alignment. Photo taken facing north.

Moreover, all of the ceramics from between the interior wall and the linear feature beneath the floor (11.C48 + 11.C49) date to the Late Preclassic and include Protoclassic wares such as Shangurro jars and bowls. Interestingly, a form of Xanaba with a spout was also recovered from the last level in 12C.48 (Figure 7.11). This form is experimental in this group and is typical of early facet Protoclassic ceramics dating from 75 BCE to CE 150 (Aragón et al. 2013). In other parts of the lowlands during the Preclassic vessels with spouts were used in the consumption of chocolate-based drinks during more elite ceremonies (Powis et al. 2002). Given that chocolate use has been documented in the Yucatán since the Middle Preclassic (Powis et al. 2002:Table 1), it is possible this sherd was from a vessel that was used to hold similar contents. Like the Shangurro with the medial flange found, the presence of jars with spouts is also a hallmark of the first phase of the Protoclassic. The rim diameter of this Shangurro composite silhouette vessel was only 15 cm, which other archaeological studies show is indicative of a personal serving vessel (Cook and Glowacki 2003; LeCount 1999, 2001; Wells 2007). Other diagnostic LPC ceramics from this trench were three Xanaba unrestricted rims with rim diameters of 27 cm, 29 cm, and 34 cm, which are larger cajetes but around the site-wide average for unrestricted Xanaba vessels (29.96 mean with $\sigma = 7.738$). the ceramic sequences from between the exterior and walls and given that many of the visible exterior basal platform stones are of the megalithic style, the most parsimonious interpretation is that Str. 65 reached its final dimensions during the Terminal Preclassic.

Figure 7.11. Xanaba paste ceramic fragment in the shape of spout.

Str. 65 Horizontal Excavations

With axial trenches giving insight into construction sequences, a 13 m by 15 m grid was placed in continuation from the units of the southern trench (11.C1 – 11.C4). This method of excavation has the potential to examine the use of space; find burials and caches, which are commonly placed within domestic platforms; locate sealed deposits under floors, which can help parse out chronology; and allow for geochemical samples to be tied to artifactual data. Each 2 m by 2 m unit was given an arbitrary number and was broken into four 1 m by 1 m units, with the northeast unit having the letter “a”, the northwest letter “b”, and the southwest letter “c”, and the southeast letter “d”. In each numbered unit, letters “b” and “d” were excavated and a soil sample was taken with a clean trowel and placed in a new Whirl-Pak along with the provenience and Munsell soil description. This checkerboard method was utilized in order to cover a greater area more quickly and to increase the spatial resolution of subsequent geochemical analyses. Each 1 m x 1 m unit was excavated in two 20 cm levels or until the larger fill sequence was reached. In some places, units were expanded horizontally and/or vertically to follow interesting architectural features or deposits.

While test pits around Str. 65 indicated an overwhelming Late Preclassic occupation, ceramics recovered from horizontal excavations showed evidence for a different occupation sequence. Indeed, from all on-mound contexts 5,107 sherds were recovered and, of the 3,870 that were identifiable, 85.12% (n = 3,294) dated to the Late Classic, while only 11.42% (n = 339) dated to the Late Preclassic. Occupations during the Early Classic and Postclassic both comprised less than 3% of the ceramics recovered and suggest minor occupations

Western Superstructure

The western superstructure (Str. 65a) measures 5 meters (N/S) by 3 m (E/W) and was investigated with four 1 x 1 m units 11.C46b/11.C46d and 11.C47b/11.C47d. While the first level (~20 cm) of these units dated primarily to the Late Classic (53 of 100 identifiable sherds), 21 of the sherds dated to the Late Preclassic, including 15 bichromes (Shangurro and Hauchinango). Nevertheless, below the first level, the highest frequency of sherds dated to the LPC. Indeed, some stuccoing events suggest a previous LPC construction below 65a. Pieces of stucco flooring and a medial fragment of prismatic obsidian were found in at the end of level 11.C46b-3, roughly 45 cm below the surface. Roughly 10 cm below this, curved in situ vertical stucco was found that likely formed an architectural embellishment; all of the ceramics from this context (11.C46b-4 and 11.C46d-4) were from the end of the Preclassic, including a majority percentage of the Protoclassic Shangurro jars with interior striations. A soil change to a fine grayish brown (10 YR 4/2) was noted and separated into a distinct lot (11.C46b-4a); only three sherds were found but all were Late Preclassic and one was a Protoclassic variety of red and orange slipped Xanaba (Chunchen). Also of note, this area had a high percentage of Shangurro (43.75% or seven sherds of all LPC sherds recovered), including a variety of surface treatments associated with the Protoclassic such as incisions and interior striations. This high frequency of Shangurro mirrors discard patterns found on the western side of the structure found in test pits.

Eastern Superstructures

The majority of the horizontal excavations exposed and investigated two semi-circular superstructures—one the north (Str. 65b) and one to the south (Str. 65c) that were joined by a line of stones running north-south on the west and braced by a line of larger stones on the east (see Figure 7.2). Str. 65b measures 4.5 m (N-S) and and 6.5 m (E-W) and consisted of one to two courses stones. Str. 65c is more circular than Str. 65b and measures 4.5 m (N-S) and 4 m (E-W). Additionally, 65c was roughly flush with the surface of the platform, while 65b was about 35 cm above the surface of the platform, suggesting it might have been part of a different construction episode. This configuration looks like a pair of eyeglasses and is called an “open front frame brace” (Smith et al. 2006). Similar examples are present at Chunchucmil [S2E2-14] (Hutson et al. 2007:464 and Figure 11) as well as at Ichmul de Morley and other sites between Ek Balam and Chichen Itza (Smith et al. 2006:164). This domestic architectural plan includes a perishable dwelling with two rooms joined by a frame brace in the rear and is “uncommon in Yucatan, suggesting a special function” (Hutson et al. 2007:464). At Chunchumil, a residential group containing an open front frame brace was abandoned by the Late Classic (Hutson et al. 2007), while those at Ichmul were inhabited until the Terminal Classic (Smith et al. 2006).

In the open space between 65b and 65c, 145 of 150 identifiable sherds dated to the Late Classic. Of those sherds, 138 were from larger food serving or preparing vessels, including jars and large cazuelas. A bark beater was also found in 29d-2. Ceramics frequencies are similar from contexts inside 65b with the vast majority of ceramics dating to the Late Classic; however, 15.65% of the ceramics dated to the Postclassic, suggesting a possible Postclassic occupation. One small bone fragment weighing less than 1 g was also found inside 65b. Late Preclassic ceramics found (n = 8) include types like Tipikal, Shangurro, Huachinango, and Polvero Chikin. Ceramics from 65c see more from the LPC (32.28%) but still a majority from the LC (57.48%). Of the 41 sherds from the LPC, 43.90% were bichromes from the Preclassic to Classic transition.

Operation 19/Structure 239

Structure 239 (Op. 19) is a megalithic platform measuring 21 m x 21 m with a height of roughly 1.7 m (i.e., surface area of 441 m2 and volume of 749.7 m3) that is located 415.69 m north of the center of the Central Plaza. It was chosen for extensive, broad-scale excavations because: 1) it had several characteristics of large-scale food production and/or consumption (including highly elevated ceramic densities of aesthetically-pleasing ceramics and multiple metates); 2) it had a highly diverse ceramic assemblage during the Late Preclassic; and 3) it was located in the northern part of the site and was "medium" distance (250 – 500 m) from the center of the site. Additionally, from all off-mound test contexts, this operation has the highest ceramic density counts at 2836.38 g/m3 (cf. with the overall average of 1554.19 g/m3 with a standard deviation of 1407.6 g/cm3), with six different contexts having a density of over 3450 g/m3. It is also possible these elevated densities might be the direct result of the long occupation of this residential platform. Three levels (19.B1-1, 2, and 3) from one test pit directly adjacent to two of these large metates had an average density of 5108.29 g/m3, and of the sherds recovered, 71.39% date to the Late Preclassic. These high densities of Late Preclassic indicated greater economic ability to provision the household and/or a larger household, both of which typically indicate greater wealth (Netting 1982; Reid and Whittlesey 1982; Smith 1987). For these reasons, Str. 239 was chosen for broad-scale excavations.

Units excavated are shown in the figure below (7.13). Overall, ceramics recovered mirror the general chronology of Ucanha: two heavy occupations during the Late Preclassic and the Late Classic (Figure 7.12). Less than 0.17% of the ceramics from this operation dated to the Middle Preclassic.

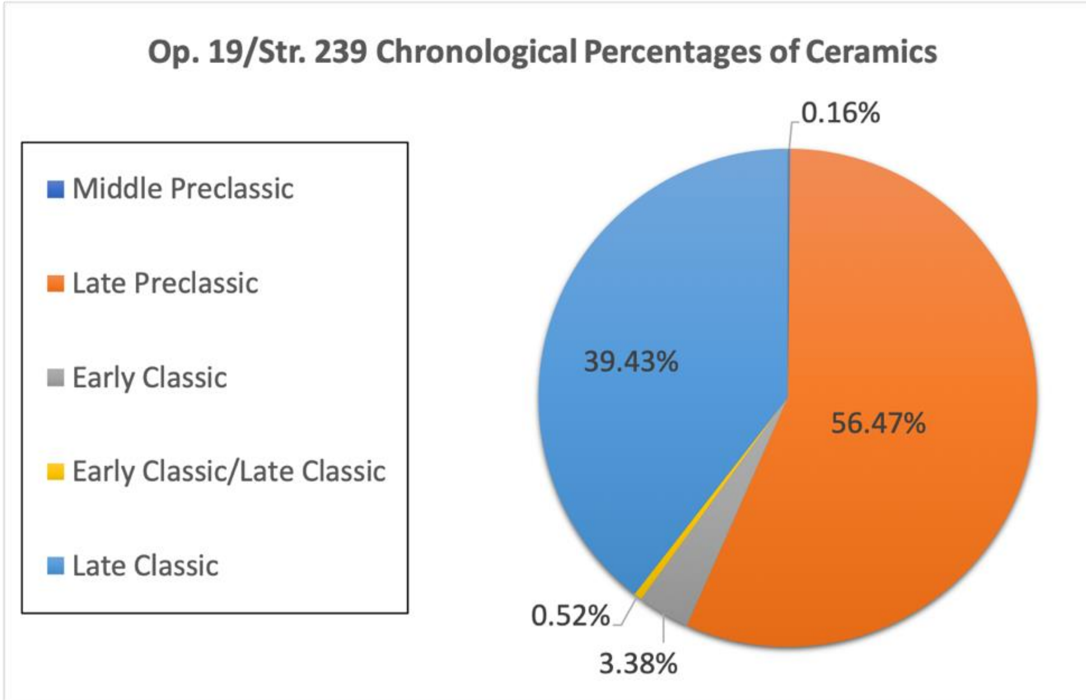

Figure 7.12. Pie chart of ceramic chronology from Op. 19D.

There is, however, a relatively larger definitively Early Classic component—by definitively I mean some bichrome types from the Late Preclassic surely were still being produced during this period—at Str. 239, including 171 sherds of Saban Becoob as well as true Early Classic polychromes such as Tituc and hallmark Protoclassic types from the southern lowlands (Dos Arroyos and Aguila).

Axial Trench

Guided by the test pits with the highest frequencies of pottery and the presence of a visible portion of the basal platform, a 10 x 2 m trench was placed into the eastern part of Str. 239 (Figure 7.13, units 26,24; 28,24; 30,24; 32,24; and 34,24). In unit 19D. 34,24 of this trench, a low-laying basal platform wall with megaliths was found resting on bedrock (Figure 7.147). The level from behind this wall that continued down to bedrock

(19D.32,24-4), yielded an overwhelming majority of ceramics that dated to the Preclassic-Classic transition (95.65%), including Tituc (n = 3), a true polychrome that securely dates to the Early Classic. Behind this megalithic wall, there was a retention wall, similar to the construction seen at Op. 11/ Str. 65. Ceramics (n = 12) from behind this retention wall (19D.32,24-6), solely date to the same time period and include Dzalpach and Becoob, a variety of Saban that dates to the Early Classic at Izamal (Quiñones 2006:58). A small ceramic bead, which can be found in supports from Protoclassic ceramics, was also found. Thus, ceramics suggest the extent of Str. 239's basal platform, at least on the eastern side, was constructed by the beginning of the Early Classic.

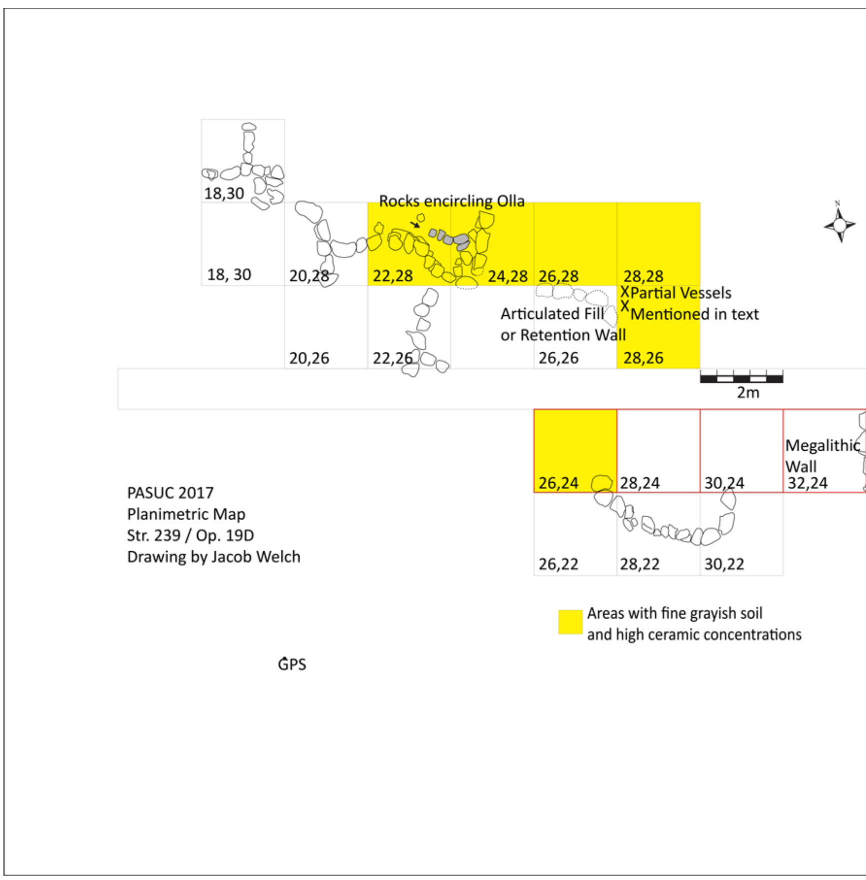

Figure 7.13 Planimetric map of excavated parts of Str. 239/Op. 19D with areas of high ceramic concentrations in fine grayish soil highlighted in yellow and trench shown in red.

Figure 7.14. A photo of a megalithic wall that forms the basal platform of Str. 239.

A Terminal Preclassic Oven and Ash Lens Deposit

In the northeastern part of Str. 239 (units 19D. 22, 28 and 19D. 24,28), an intact oven and high ceramic densities were found in an ash lens that was roughly 60 cm thick at roughly 1.3 m below surface. Within this ash deposit was a large, intact Chancenote olla that was insulated by other Chancenote sherds (or possibly entire vessels) and surrounded by a semicircular rock alignment (Figures 7.15 and 7.16). Fire-cracked rocks were recovered from inside this vessel suggesting a cooking function, such as heating a liquid or stew. Similar features were found at this depth were found at Oxkintok and have been identified as ovens (Ancona Aragón, Iliana personal communication 2017).

The ceramics from this deposit overwhelmingly date to the Terminal Preclassic and exhibit surface treatments and morphological variations that are common amongst ceramic assemblages toward the end of this time period, which strived to materially manifest social differentiation within “a social environment marked by increasing stratification” (Glover and Stanton 2010:72, see also Bey 2006; Callaghan 2013; Reese-Taylor and Walker 2002). Indeed, a variety of different aesthetic embellishments including bichrome/polychrome painting and surface treatments (e.g., incising, impressions, imitation “negative” trickles) make this ceramic assemblage characteristic of other feasting assemblages (e.g., Clark and Blake 1994; Junker 2001; LeCount 1999, 2001; Welch and Scarry 1995). Numerous protoclassic attributes were present. These ceramics included 1501 identifiable sherds, 171 of which were cajetes and 1324 were ollas. All of these sherds, with the exception of two Early Classic polychromes (one Tituc and one Aguila) and one Joventud Nolo chocolate spout (possibly an heirloom from the Middle Preclassic?), date to the latter half of the Late Preclassic. The ceramics included painted wares such as Shangurro and Huachinango, redwares such as Sierra Red and Xanaba, and striated jars such as Chancenote, Tipikal, and Unto. Also of note is the variation of surface treatments within Xanaba, including Caucel chorreado, imitation batik Usulutan, Chunchen rojo y naranja, Dzalpach compuesto, incised varieties, and an example of a special grooved Xanaba. Indeed, the Usulutan-imitation trickle painting of Caucel Chorreado sobre Rojo and the creamy-white surface of Xanaba Dzalpach Compuesto are associated with Protoclassic modes at Izamal (Quiñones and Boucher 2006). Furthermore, Brady et al. (1998:28) associate Shangurro rojo sobre naranja with Protoclassic modes. Another three Xanaba sherds had a pink slip, which is characteristic of ceramics of the eastern coast of the Yucatan. Coupled with Huachinango, which is likely produced at Ek Balam (Bey et al. 1998), the residents of this platform seemingly had access to a web of economic affiliations further abroad. Since a household's social networks as evinced by diversity of possessions within an artifact class and nonlocal trade are a component of its capabilities—a major facet of quality of life—it appears the inhabitants of this platform had elevated capabilities since they were able to procure ceramics from across the Northern Lowlands.

Figure 7.15. A thick ash deposit is visible with a ring of stones (beneath the photo board) that support the Chancenote olla.

Figure 7.16 Close-up of the Chancenote vessel with sherds lining the side.

Ceramic attributes also evince that this deposit was the result of feasting. One indication of feasting is the presence of larger unrestricted vessels (i.e., >30 cm rim diameter) used for serving and smaller unrestricted vessels (i.e., <19 cm rim diameter) used for consumption (Blitz 1993; LeCount 2001:945; Wells 2007). Within this ashy matrix, 44 diagnostic sherds underwent modal analysis; of these 28 were identified as serving vessels (i.e., bowls or plates) and 25 had enough of a rim to measure diameter. When plotted on a histogram (Figure 7.17), there is natural break between 20 and 25 cm, suggesting two classes of serving ware size. As mentioned elsewhere, this bimodal distribution of large and small unrestricted vessels has been associated with larger-scale feasting (Potter 2000; Wells 2007; Wills and Crown 2004) in archaeological contexts from the US Southwest to Mesoamerica. The high frequency of large vessels coupled with faunal data and the high ceramic density all indicate food production and consumption beyond the needs of the household.

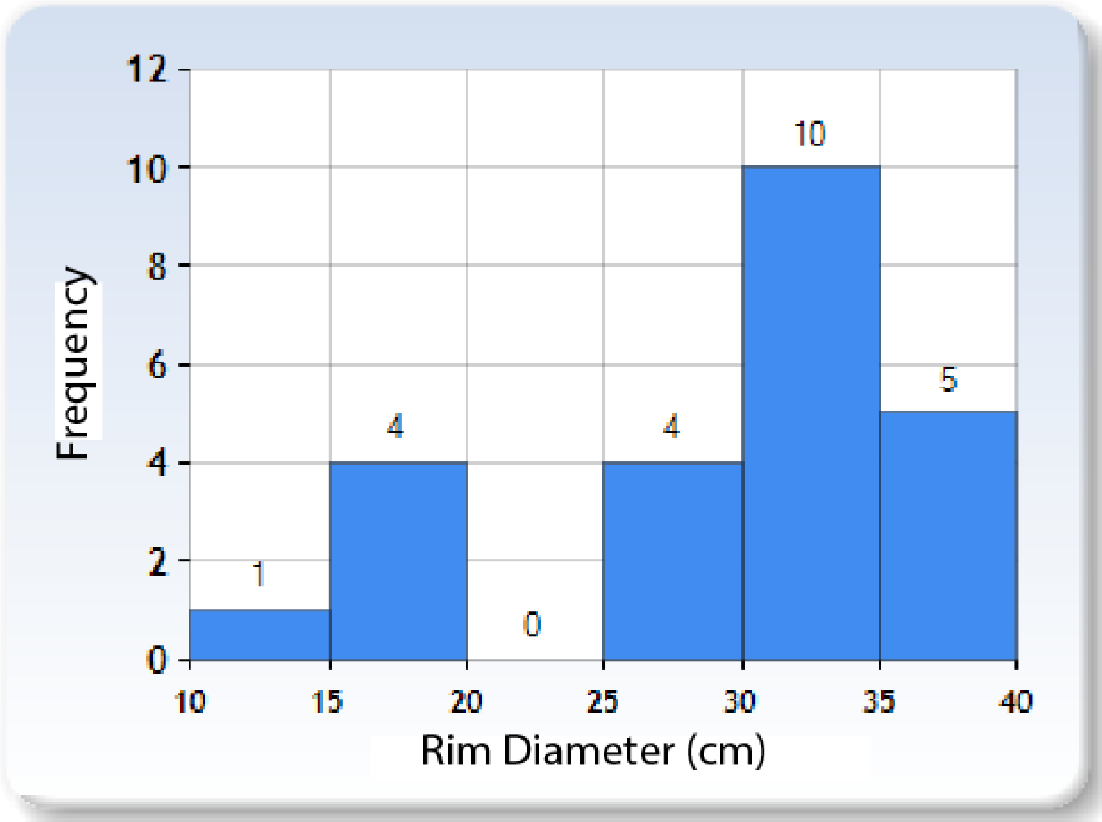

Figure 7.17. Histogram of rim diameters from serving vessels associated with oven feature.

Additionally, many of sherds were quite large and able to be refit into larger pieces (Figure 7.18), suggesting some of the ceramics were intentionally smashed. This pattern is a common characteristic of ritual feasting (McAnany 2010:133; Spielmann 2002:203) and is derived from ethnohistoric and ethnographic (Tozzer 1941) sources from across Mesoamerica that document the smashing of vessels during feasts.

Figure 7.18. Both photos show large, refittable sherds smashed around oven feature; top to give overall perspective and bottom to give close-up details.

A number of gastropods was also found on top of, around, and under this Chancenote vessel. On top of and around—that is outside of the circular rock feature—we found 52g of 18 gastropods, which consisted only of the central axis or columnella. Additionally outside of circular rock feature we found one complete whelk shell gastropod (25 g) with holes drilled in the body.

Faunal data bolster the interpretation that this was a feasting episode. With the help of Marisol Ley Lara from UADY, 92 bones recovered from this ashen deposit were classified. Dental marks, cut marks, heat processing marks, age, type of bone, and fractures were noted when identifiable. Of these 92 bones the following were identified: 15 bird, 2 crab, 71 mammal, and 4 reptile. With the exception of three bones, all exhibited some combination of heat treatment, including boiling and/or burning. One bone was identified as the scapula of a *Meleagris ocellata* (Mexican Turkey) and 19 bones were identified as *Odocoileus virginianus* (White-tailed deer). All white-tailed deer bones were long bones, except for one rib and one metatarsal, and they all were boiled. Additionally, two bones were identified as *Mazama americana* (Red brocket deer), three bones as simply *Mazama*, seven bones to the level of *Cervidae*, and 14 bones simply as *Artiodactyla.* Thus, while only a fraction of the bones were identifiable down to genus and species, it is probable the number of deer remains is much higher when unidentifiable *Cervidae* and *Artiodactyla* bones are included. The overwhelming presence of deer likely indicates that this feasting episode included more elite members of Ucanha who were able to mobilize resources for extra-household commensal politics (Pohl 1994; White 2005). Furthermore, more prime cuts of fauna are also associated with elite feasting practices (Kelly 2001:354; Pohl 1994), and by and large only meat-sparse long bones were recovered from this processing area; it is likely bones bearing more meat were distributed to guests and discarded elsewhere. The presence of Mexican Turkey (*Meleagris ocellata*) is also interesting because it is associated with domesticated animals used for feasting in the Late Classic; however, recent studies have shown its presence can be traced back to the Late Preclassic (Shaw 1999; Thornton et al. 2012).

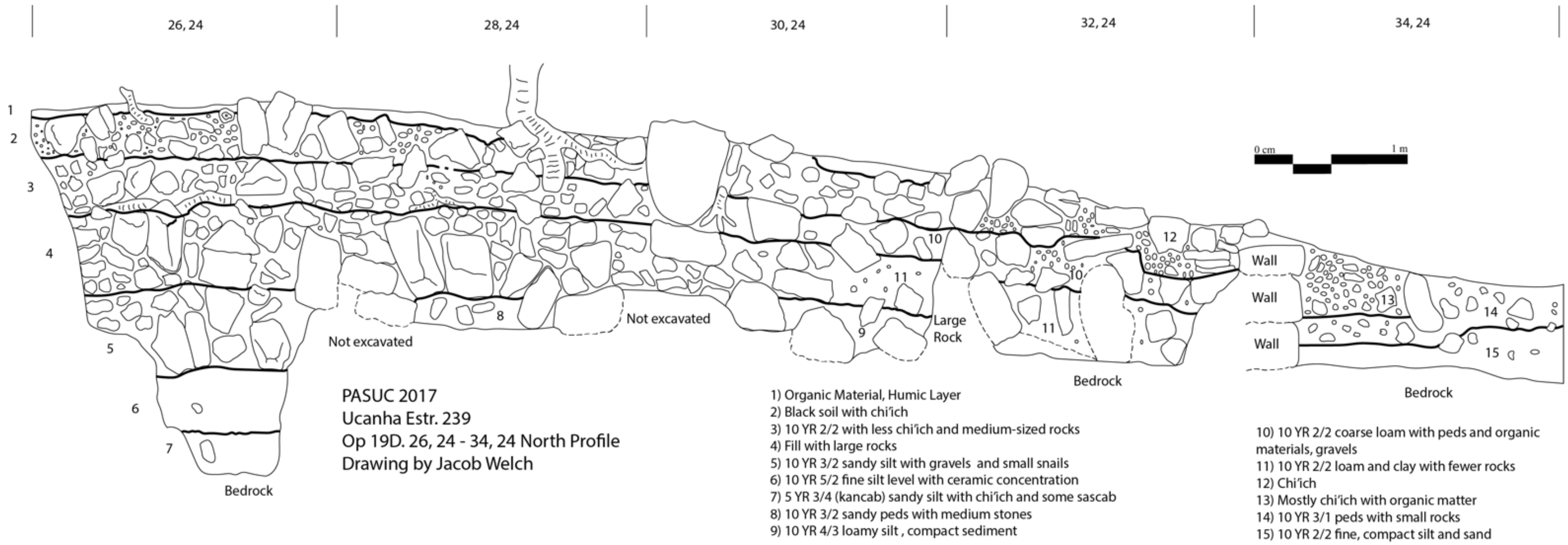

Figure 7.19 Profile of Op. 19D trench facing north.

Mass Offering or Remnants of a Work Party

Within the axial trench, one context more towards the center of the platform (19D.26,24-5) and under a layer of large fill stones with soil, about 1.6 m below the surface, consisted of a lighter, finer soil (10 YR 5/2, grayish brown of powdery silt) in which there was a high concentration of Terminal Preclassic/Protoclassic ceramics (Figure 7.13). Given that a similar stratigraphic layer was found at all parts of the platform that went down this far, it is likely this layer represents a large intentional deposit placed before larger fill stones were set during construction. As will be discussed below, the grayish hue and fine sediment size of this sediment layer is from a nearby burning episode that deposited a thick layer of ash. At this depth and because of large unmovable stones, the unit was only 1 x 1 m. However, only Terminal Preclassic/Protoclassic ceramics were recovered, including several different types of Xanaba (Caucel, Chunchen, Dzalpach, an untypeable grooved variety with pink paste), Sierra (Altamira and Lagarto), and Shangurro (an unslipped, striated bowl with trickle, faux-Usulutan painting). Painted ollas—Unto, Tipikal, and Shangurro—were also present. A total of 4,994 g sherds were recovered in a space with a volume of .36 m3, yielding a ceramic density of 13,872.22 g/m^3, which is exceptionally high compared to the site average of 1554.19 g/cm3 (σ = 1407.9 g/cm3). Of the 334 total sherds, 15 underwent attribute analysis; all but two (Shangurro and Sierra) were from the group Xanaba. Eight of the 14 Xanaba sherds were unrestricted vessels that had a rim diameter of 30 cm or greater, which included Protoclassic types such as Dzalpach and Chunchen Manchones. A couple personal-sized serving vessels (n = 2), including a Sierra Red and a special grooved and pink paste Xanaba that measured <19 cm were also present. A

Chunchen olla, a relatively rare form, was also recovered. A very small amount of bone—three pieces weighing only 5 g—and four pieces of conch shell (93 g) were found. While the faunal remains are not robust, the high frequency of large vessels coupled with the extremely high ceramic density and similar deposits at this depth suggests food preparation and communal consumption was probably an important component of mobilizing labor to construct Str. 239. As will be shown later in this chapter, this layer of grayish-brown silt with a high frequency and density of Protoclassic ceramics suggests the people who constructed this platform intentionally deposited this assemblage before raising the living surface of this platform.

As was seen in deeper contexts in the axial trench and the large ash deposit, in unit 19D.26,26 and 19D.28,26 located at the northeast corner of Str. 239, at roughly 1.5 m down there was a lighter and finer soil with high percentage of Protoclassic / Terminal Preclassic ceramics (Figure 7.19). This unit uncovered what appears to be a construction phase of either well-articulated fill or the previous extent of the platform. Again, ceramic concentrations were elevated in this context of lighter and finer soil: 10,600 g/m3 for 19D.26,26-5 and 19D.28,26-5 (which were excavated together) and 8,205.13 g/m3 for 19D.26,26-7 and 19D.28,26-7 (which were excavated together as well). Faunal remains (n =12) were also present, including two different species of deer—*Odocoileus virginianus* and *Mazama*—all but one of which exhibiting signs of cooking. Seven of the bones were from an adult white-tailed deer. Bones present included parts from a pelvis, tibia, and metatarsal. This context also included partial, seemingly smashed, cajetes such as a Xanaba Red (Figure 7.20) and Caucel chorreado with painted trickle designs (Figure 7.21). The paste of the Xanaba Red sherds were pinkish-white and the slip colors graded from red to orange, both of which are attributes associated with Protoclassic ceramics from Izamal (Plank et al. 2018). The rim diameter of this Xanaba cajete was 32 cm, putting it in the "large" unrestricted vessel category according to the histogram in Figure 7.22 (see also LeCount 2001:945; Wells 2007). Considering the depth, sediment matrix, and associated cultural assemblage, this layer likely represents the remnants of a feasting episode for both the people who constructed this platform and for the platform itself. Given the horizontal proximity and same stratigraphic depth, it is likely this assemblage is coterminous with the large ceramic deposit and faunal remains associated with the oven feature.

Figure 7.20. Photo of partial Xanaba Red cajete in situ and cleaned. Shown here with relation to articulated fill.

Figure 7.21. Photo of partial Caucel chorreado cajete in situ and cleaned. There is a small piece of bone just to the north of the in situ sherds.

Interestingly, of the 30 unrestricted vessel sherds from all of Ucanha that underwent attribute analysis and had rim diameters measuring 19 cm or less, 25 were from Str. 239. Structure 92—a Late Preclassic palace flanked with masked friezes where one would expect feasting to occur given its wealth and access to resources—only had three vessels of this size; one rim sherd of this size was also found associated with the burial in the Central Plaza and one from Str. 65. Furthermore, these 25 sherds were from a variety of aesthetically-pleasing ceramics including Shangurro, Fango bichrome (a type of Huachinango), Dzalpach Compuesto, Percebes with a medial flange (an attribute that dates to the early facet of the Protoclassic, Xanaba Red, and a unique grooved form of Xanaba with a pink paste. When combining all serving vessels found in the oven feature and areas that were excavated down to the finer grayish, brown stratum, a total of 27 rims 30 cm or larger and nine sherds 20 cm or smaller were recovered. When plotted on a histogram, again there some slight bimodal trends around 19 cm and 30, both of which are argued to be the limits of small and large serving vessels in the Maya area (LeCount 2001).

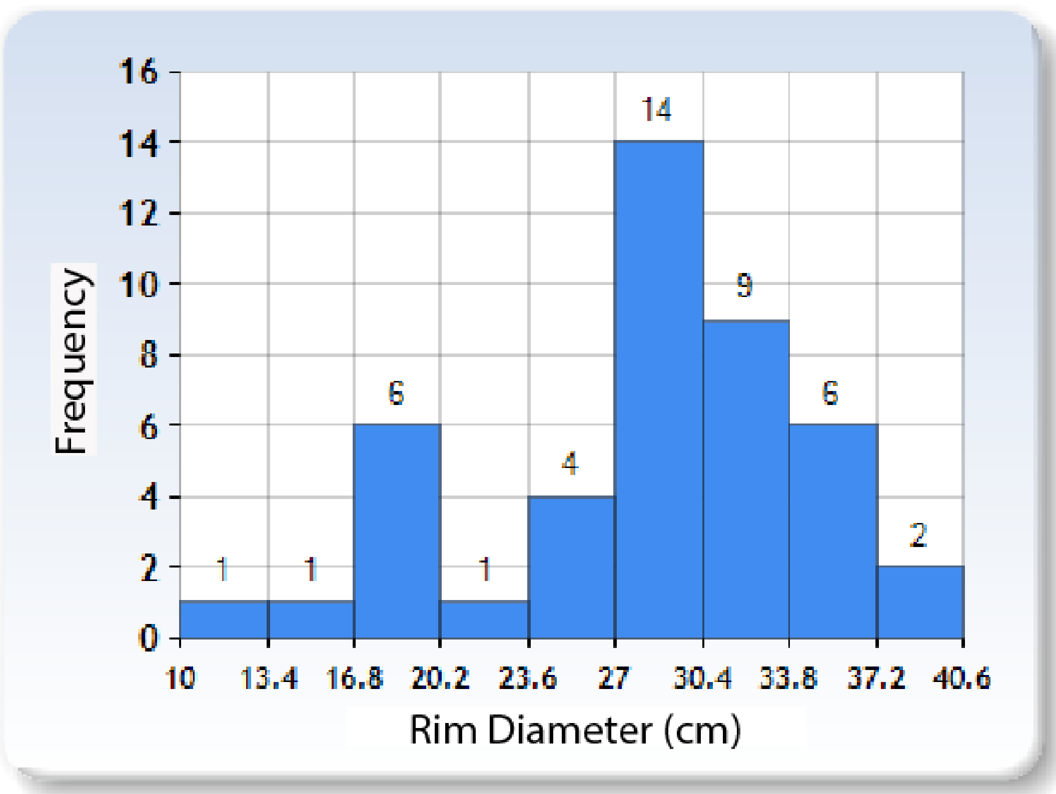

Figure 7.22 Histogram of rim diameters from serving vessels found in finer grayish, brown strata in units highlighted in yellow from planimetric map.

As seen in ethnographic (Boremanse 1998; Stross 1998; Vogt 1969), archaeological (Harrison-Buck 2004; Hutson et al in press.; McAnany 2011), and epigraphic examples (Plank 2004; Stuart 1998), many Maya houses were ontologically animate beings that not only interacted with human agents, but were envisioned as an extension of the household's ancestry and inherited wealth (Gillespie 2000c). A common practice for nourishing this animate being is feeding it with offerings of food, ceramic, or other culture refuse, sometimes in large-scale dedications (Brown and Garber 2008; Moholy-Nagy 1997; Stross 1998). Given the high density of Protoclassic ceramics in a similar brownish-grey silt layer, it is likely this cultural stratigraphy represents the inhabitants of Str. 239 intentionally breaking large amounts of ceramics, which is a discard pattern seen in several archaeological examples of feasting (McAnany 2010; Spielmann 2002). However, these ceramic deposits typically occur "off-mound" in middens (Brown 2001; Rosenswig 2007; Rosenswig et al. 2018). Nevertheless, examples of massive refuse deposits, such as obsidian or lithic debitage, have also been deposited as offerings, indicating the ability to muster labor or resources (Moholy-Nagy 1997; Pendergast 1981, 1990). such as This will be discussed further in chapter 8; however, the robust Protoclassic assemblage and noticeable Early Classic assemblage suggest that the household occupying Str. 239 was able to successfully negotiate the Early Classic downturn and reaffirm their elevated quality of life during the Late Classic.

Operation 13/Structure 132

Op. 13/Str. 132, located 586.07 m from the center of the Central Plaza, is a relatively low platform (~1 m) outlined with megalithic stones and was located near a rejollada, or karstic depression where thicker soils can form, that transitions into a cenote.

This platform was more irregularly shaped (somewhat trapezoidal) than the more rectangular Strs. 65 and 239 and its volume was 376.88 m^3. Ceramics recovered from test pitting indicated a predominate occupation during the Late Preclassic (75% of sherds) with another minor occupation during the Late Classic (16.67%). This structure was chosen for horizontal excavations for several reasons: 1) it was at the southern boundary of the site (i.e., further away [500+ m]), so I wanted to see how distance from the site center correlated with quality of life; 2) it was located near a potentially important ecological resource that could have provided rich arable land and/or water; 3) the structure was smaller than the others investigated, thus allowing a chance to see whether or not architectural labor investment correlated with the ability to procure a wide variety of ceramics during the Late Preclassic – Early Classic.

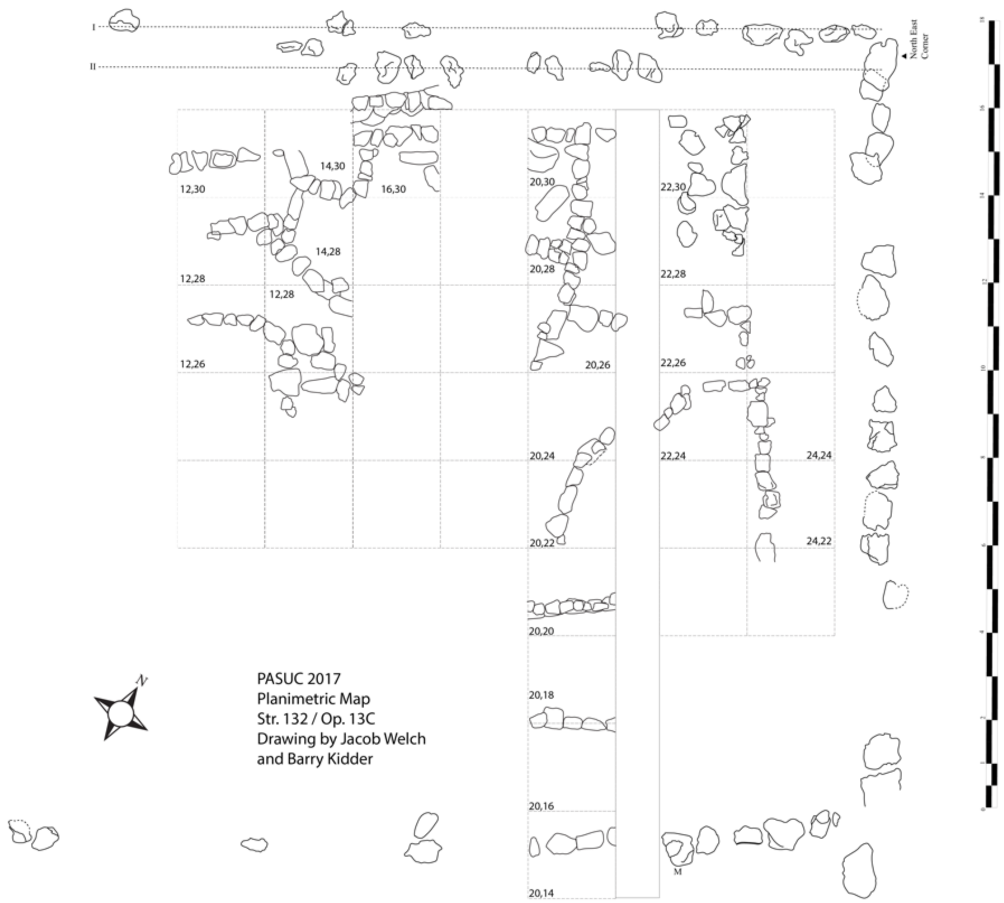

Figure 7.23. Planimetric map of Str. 132/Op. 13C

The methodology for excavation was similar to the previous operations. All units were dug as 2 x 2 m squares, and the grid was oriented to 31 degrees east of north. Similar to Str. 239 Op19D, arbitrary numbers were given to each grid in order to approximate their position on a Cartesian plane with the first number representing “easting” and the second number representing “northing”. For example, if 20,20 was chosen as an arbitrary starting point were a GPS coordinate was taken, then unit 28,22 would be eight meters east and two meters north of this GPS coordinate. Similarly, unit 10,12 would be 10 meters west and 8 meters south of this GPS coordinate.

Axial Trench

As with the other structures, an axial trench was placed running from off-mound into the platform in order to identify and date construction sequences and possible expansions. This trench included units 13C.20,20; 13C.20,18; 13C.20,16; and 13C.20,14 with 13C.20,14 continuing off-mound (Figure 7.23). In this portion of the excavations, a single-course megalithic basal wall was encountered, which was visible from the surface as well as another two other wall constructions.

Another wall was uncovered in unit 13C.20,18 (Figure 7.24). This wall appears to consist of two construction episodes within itself. Sharing the same orientation with the outer megalithic basal platform, there is a pair of megaliths that are in a grayish-brown sandy silt; however, on top of this there is a mix of megalithic-like stones and quadrangular cut stones. Yet another three meters to the north in unit 13C.20,20 there was another crude retaining wall of articulated fill (Figure 7.25).

Figure 7.24. Wall found inside the outermost megalithic retaining wall of basal platform. The large two stones below the more nicely-cut course of stones are poorly hewn megaliths.

Figure 7.25. Photo of a crude retaining wall likely to help stabilize fill.

This platform also showed in situ evidence of a poorly-constructed staircase on the northern side of the structure indicates at least parts of it were plastered with stucco (Figure 7.26). Compared to the other structures investigated, this structure has considerably less labor investment, as its height is only roughly 1 m and the size of the stones used as fill were smaller, likely requiring less paired coordinated labor to move them.

Figure 7.26. Rocks highlighted in yellow form possible staircase on north side of Str. 132 in 13C.16, 30 and bit north. Facing north.

Ceramic trends at Str. 132 indicate a strong Late Preclassic occupation with a quality of life that was lower than the other two structures investigated as evidenced by a less diverse ceramic assemblage, lower labor investment, and less resilience into the Classic Period. Unlike the other two structures, this platform was occupied only during the Late Preclassic with 985 of the 1,040 identifiable sherds (94.71%) dating to this period (Figure 7.27). Of these 985 Late Preclassic sherds, 199 (or 20.20%) were bichromes (85 Huachinango, 1 Dzilam, and 113 Shangurro). Additionally, the inhabitants of this platform had significantly fewer redwares types that had Protoclassic surface treatments (i.e., Laguna Verde, Dzalpach, Caucel, etc.). In fact, only three sherds of these redware types—Xanaba Chuchen Manchones (n =1) and Sierra Repasto negro (n = 2)—were recovered. Of note, one of these sherds was an unslipped Xanaba in the form of a mushroom-like incensario, which is a form noted in the early facet of the Protoclassic that dates from 75 BCE – CE 150 (Ancona Aragón et al. 2013:96). No ceramics from the Peten or other parts of the Southern Lowlands that dated to the Late Preclassic or Protoclassic were found (e.g., Dos Arroyos, Aguila, Flor), suggesting the capabilities of this household were less than the other two households investigated. Only one Early Classic polychrome sherd—a flange from a Tituc bowl—was recovered. Based on this ceramic data, it appears by the first few centuries into the Classic period this household was abandoned, possibly because it did not have the economic and social capabilities to weather the changing sociopolitical landscape after integration.

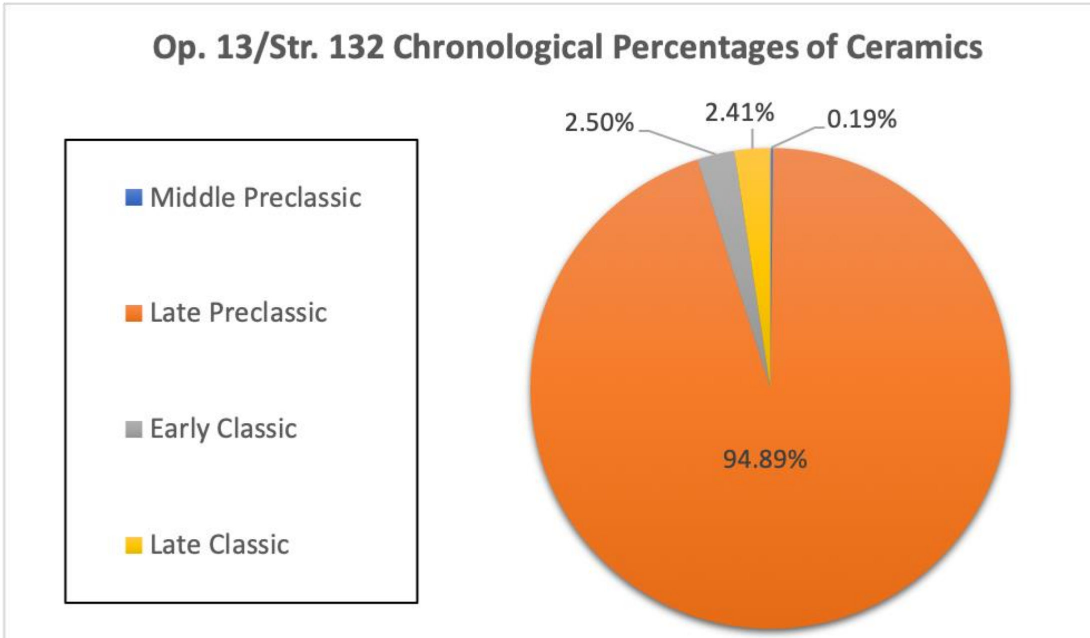

Figure 7.27 Distribution of ceramic chronology at Str. 132.

Ceramic and Bone Concentration

On the last day of excavations, a discrete deposit between the outer-most perimeter of megalithic stones and an earlier wall construction was found below some poorly preserved pieces of stucco and in a lighter soil was encountered. Not only was the soil lighter and grayish but in addition to several sherds that were able to be refitted, we also found a small assemblage of faunal remains. While only 15 diagnostic sherds were recovered from this context, all of them were serving vessels (i.e., composite silhouette, bowl, or unspecified unrestricted orifice) and 10 of them were bichromes. From all other units at this structure, only five sherds with measurable rims were recovered. Six East Coast bichrome sherds (5 Huachinango and one Dzilam Verde) all were 30 cm in diameter or larger and have an average of 33.2 cm; three rims measuring 35 to 37 cm where some of the largest found at Ucanha and were roughly one standard deviation larger than the site average for East Coast bichromes (Average 31.32 with a standard deviation of 4.85). So apparently this household was able to provision themselves with some relativetly large serving wares from areas further to east (possibly Ek Balam). One of these diagnostics included a composite silhouette Xanaba Chuchen Manchones with a medial flange. This is a rare, experimental form with a medial flange characteristic of earlier facet or “Protoclassic 1” assemblages that date between 75 BCE and CE 150 (Aragón et al. 2013). Just over one-third (33.67%) of all bichromes were from this area, with the rest of the trench accounting for 15.08% (n = 30) of the other bichromes. Clearly this deposit included a high concentration of aesthetically pleasing and valuable ceramics.

This ceramic concentration was also associated with deer remains as well as unidentified medium-sized mammals, which included a total of 16 different bones. At this structure this was the only area in which faunal remains were found. Four long bones from white tailed deer and red brocket deer, all of which were boiled and three of which had disarticulation cut marks, were identified. Although this assemblage is modest, it shows even more modest households during the Late Preclassic likely had access to some meat resources as well as large bichrome vessels.

Other Artifacts from Structures 65, 132, and 239

Overall, few lithic artifacts were found at all three structures discussed in this chapter. Around the Northern Lowlands, the relative lack of quality lithic sources and chipped-stone tools at some sites, has led some scholars to argue silicified limestone was used as an expedient tool (Dahlin et al. 2009). Additionally, since test pitting revealed only obsidian from one household, it is unlikely that a marketplace provisioned households at Ucanha with obsidian because this allocation would fail the distributional model (Dahlin 2009; Hirth 1998). Therefore, households that did procure obsidian or other stone tools would have done so through social networks, such as closeness to leaders via redistribution, or interhousehold exchange (Sheets 2000); both would attest to the capabilities-as-quality-of-life since this resource was locally scarce and would need to be traded in from far away. The presence of stone tools would have also added to the economic diversity of the household, which is another key component of household QOL and social differentiation.

In total, only 40 pieces of chipped stone artifacts were found from these three operations. Only one obsidian medial blade fragment was recovered from Op. 13. At Op. 11, 26 pieces of chipped stone tools were found; however, these were all found near the surface in conjunction with Late Classic ceramics. Finally, at Op. 19, 12 pieces of obsidian and one chert flake were found; however, only three pieces of obsidian were found in pure Late Preclassic assemblages. Therefore, it appears the ability of a household to procure obsidian or chert was not an important variable of social differentiation or household QOL during the Late Preclassic and Early Classic periods.

Ceramic Trends

As has been mentioned previously, the introduction of bichromes and redwares with a variety of forms and aesthetic embellishments accompanies an increasingly socially differentiated landscape across the Northern Lowlands vis-à-vis population booms, the rise of institutionalized leadership, and the control of ecological and economic resources (Bey 2006; Braswell 2012; Brown and Bey 2018; Glover and Stanton 2010). While typical materializations of social distinction present during the Late Preclassic such as obsidian blades, jade, and marine shells were mostly absent at Ucanha, social differentiation between these three residential platforms did exist in the form of labor mobilization and ceramic assemblages. As seen throughout the Northern Lowlands during this time (Glover and Stanton 2010), it is unsurprising that ceramics were the major vehicle of social distinction and an important component of QOL, both as indicators of wealth and the social relations and capacities of the household needed to procure these wares.

Among the distribution of bichromes, two major nodes of social differentiation emerge: access to Shangurro and East Coast incised bichromes (i.e., Carolina, Dzilam, and Hauchinango). The percentage of Shangurro for the entire assemblage of all operations (i.e., of-mound test-pitting and on-mound broad exposures) for these three structures were: 20.80% at Str. 65, 5.45% at Str. 239, and 11.72% at Str 132. The percentage of East Coast incised bichromes for the entire assemblage of all operations (i.e., of-mound test-pitting and on-mound broad exposures for these three structures were: 3.44% at Str. 65, 4.06% at Str. 239, and 8.74% at Str 132. Interestingly, over 55% of all bichromes of all three households were Shangurro and the lowest count was 121 sherds (Figures 7.28 – 7.30). Indeed 10 of the 11 households test-pitted with ceramics mostly dating to the Late Preclassic had access to Shangurro. However, within this distribution, the household with the highest QOL during this time period, Str. 239, also had many different types and varieties within the Shangurro group (5) as did the inhabitants of Str. 65 (6). Both of these households also had access to Protoclassic orange glosswares. While the production location of Shangurro is not definitively known, recent paste recipe studies suggest Izamal might be a production location (Plank et al. 2018). The presence of Shangurro and Valladolid Incised at Xcambo, a port site with strong ties to Izamal, has led ceramicists to argue it is a Northern Lowlands iteration of red-on-orange Protoclassic ceramics from the Southern Lowlands (Ceballos 2003:181-183). Considering Ucanha shares architectural similarities with Izamal (megaliths and long-distance causeways), the well-distributed presence of Shangurro ceramics likely was the result of economic ties with this regional super-power.

The next most prevalent bichrome is Hauchinango, which is argued to be produced at Ek Balam (Bey et al. 1998). While Str. 239 and Str. 132 had at least 37% of bichromes from this type, Str. 65 only had 7.06%, suggesting that this household ties to the east were not as strong. At Ucí, for example, excavations only produced 53 sherds of Hauchinango. Komchen, a comparable Preclassic site, had only six sherds combined from Dzilam and Huachinango, and no Shangurro (Andrews 1988). Therefore, it appears that relations between the economic forces that provisioned households at Ucanha were more strongly aligned with Ek Balam and the east than those at Ucí and further afield at Komchen. Households at Ucanha seemingly faced west and east thereby broadening the social capabilities of their QOL.

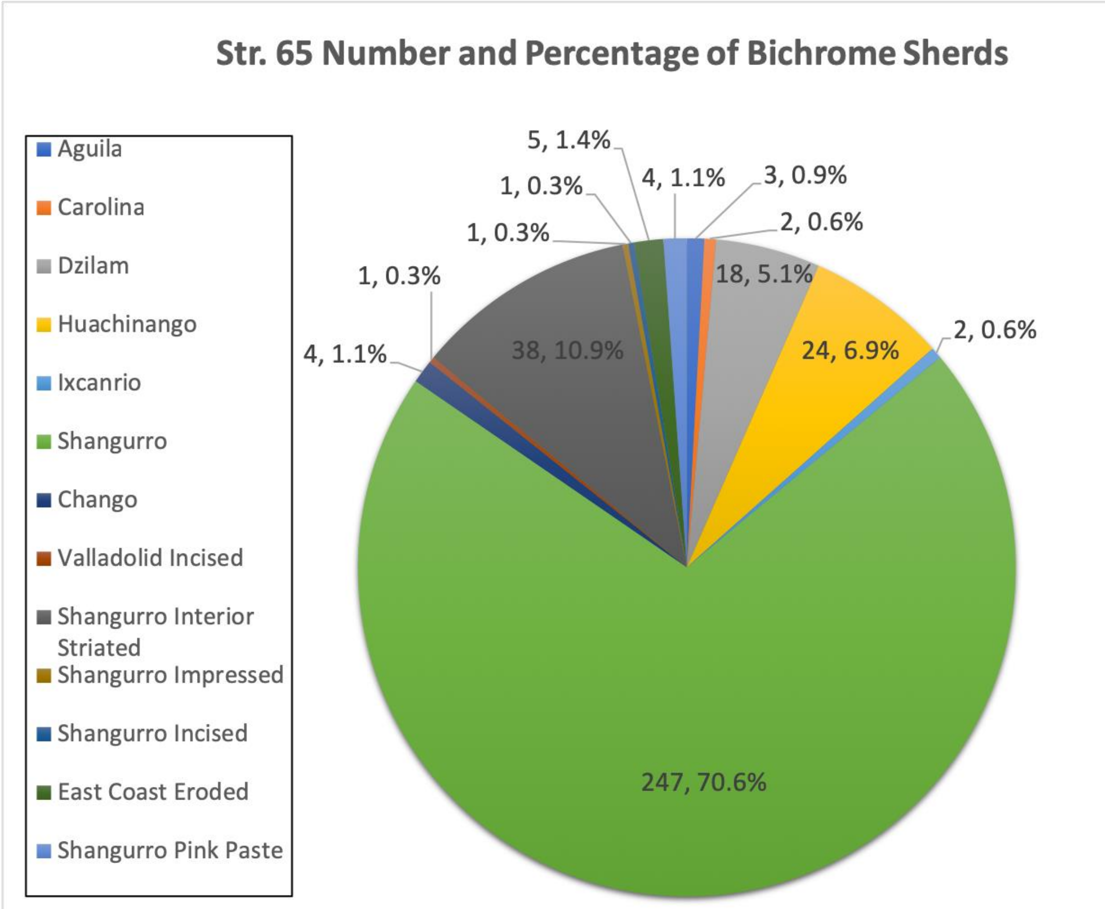

Figure 7.28. Pie chart of counts and percentages of different bichrome varieties found at Str. 65.

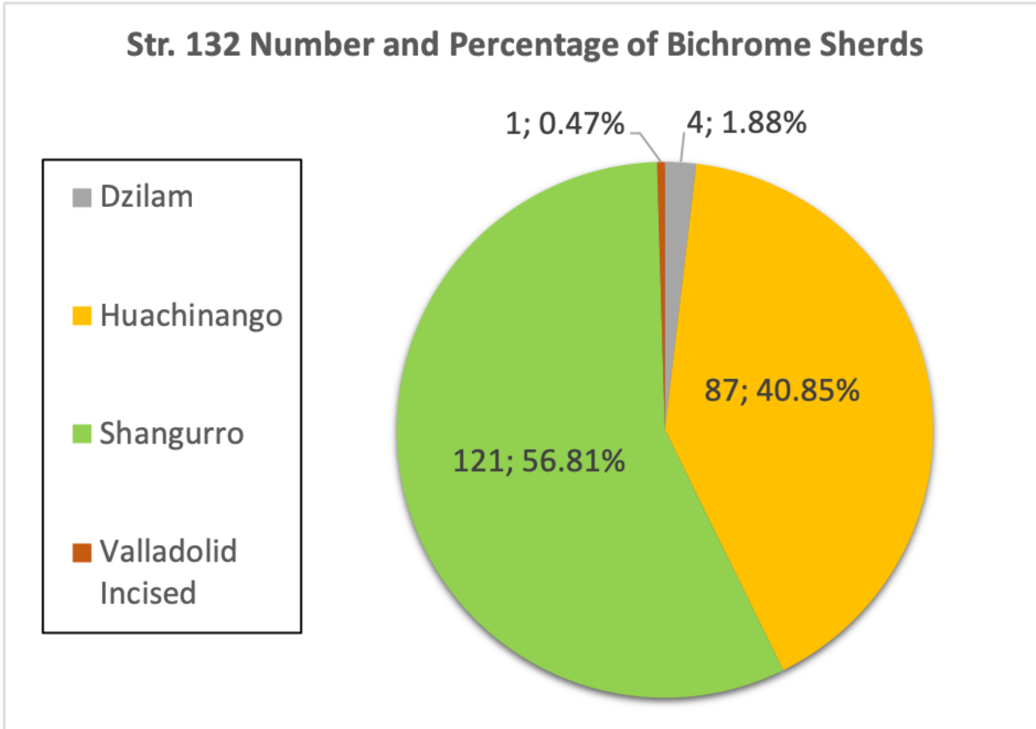

Figure 7.29. Pie chart of counts and percentages of different bichrome varieties found at Str. 132.

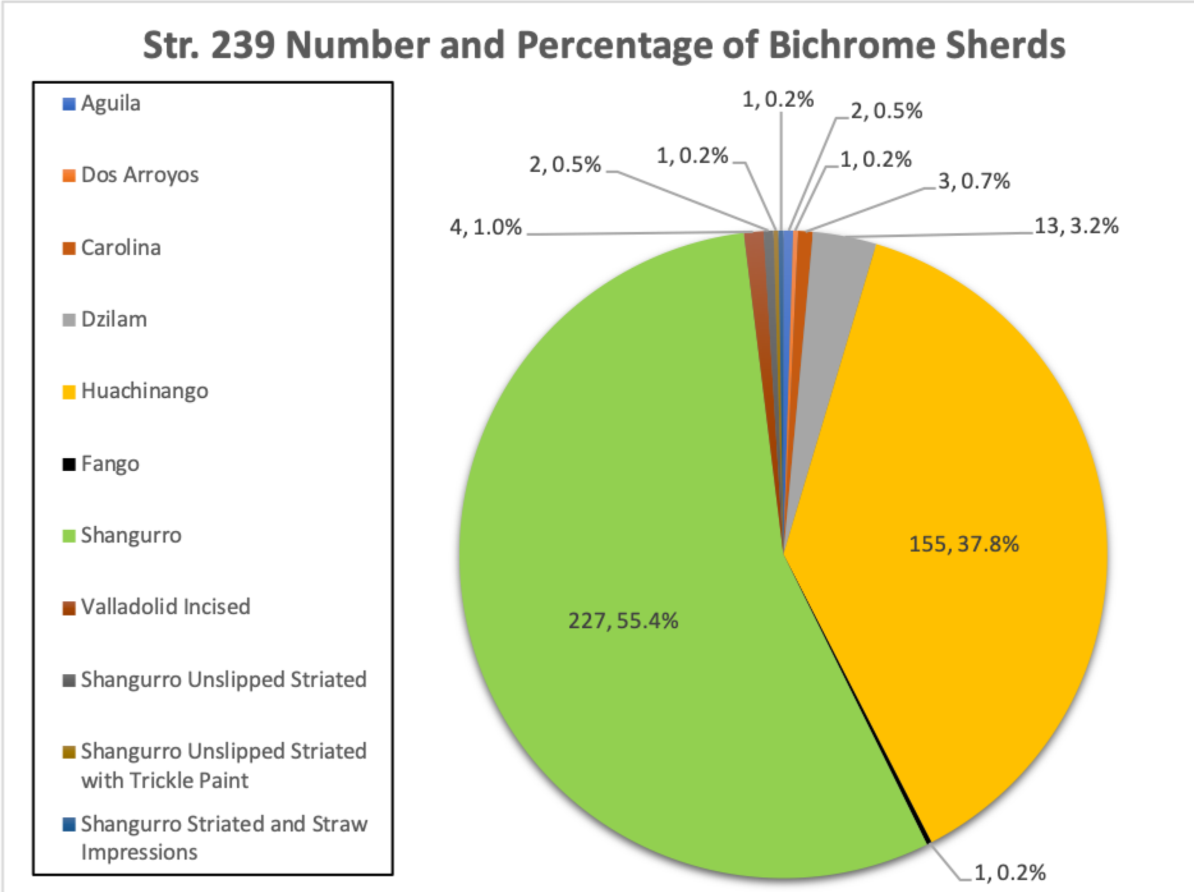

Figure 7.30. Pie chart of counts and percentages of different bichrome varieties found at Str. 239.

The ability of households to procure a variety of redwares is another important component of social distinction and exhibits a breadth of stylistic representations within an artifact class, which Smith argues is an important part of the social capabilities of the household. The distribution of redwares—that is Sierra and Xanaba—was much more varied by household (Figure 7.31 – 7.33). For example, less than 3% (only 5 sherds) of the redwares from Str. 132 had aesthetic embellishments (Figure 7.32), which highlights the inability of this household to socially distinguish itself through this material avenue. On the other end of the spectrum, roughly 14% of the redwares from Str. 239. had a variety of surface treatments, including punctations, incisions, trickle paintings, grooved rims, to name a few (Figure 7.33). Clearly, this household had access to the greatest diversity of redwares. Given that this household had more evidence of feasting and/or amassing large quantities of diverse ceramics, it is not surprising that its ceramic assemblage highlighted the visual aspect of commensal politics. About 10% of Str. 65's redwares had similarly ostentatious additions. Komchen households had a variety of Protoclassic Xanaba and Sierra with aesthetic embellishments (e.g., Dzalpach, Caucel, Xanaba Incised, and Xanaba Punctated) (Andrews 1988), as did Ucí. Given the wide range of types and varieties within the Xanaba group, for instance, these ceramics highlight the experimental nature of the Protoclassic/Terminal Preclassic with regard to the external appeal.

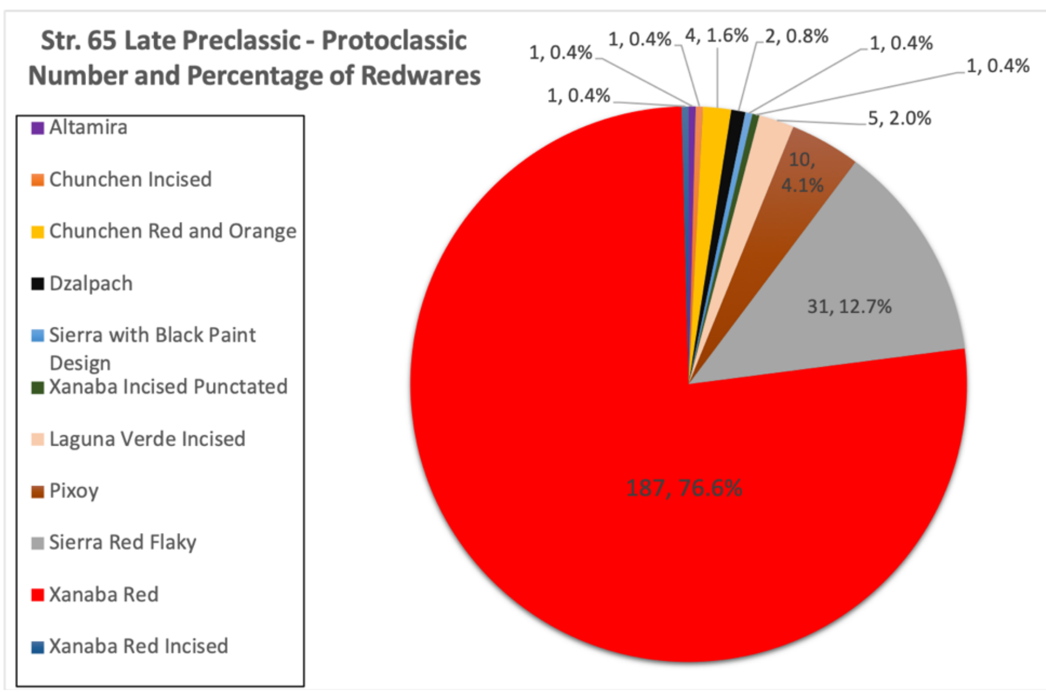

Figure 7.31. Pie chart of counts and percentages of different redware varieties found at Str. 65.

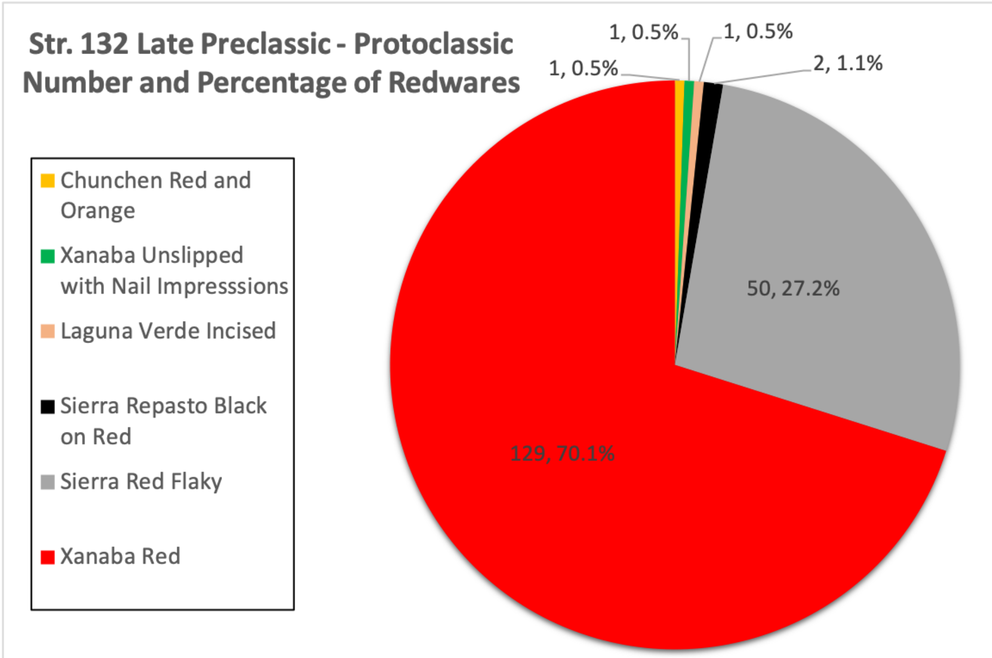

Figure 7.32. Pie chart of counts and percentages of different redware varieties found at Str. 132.

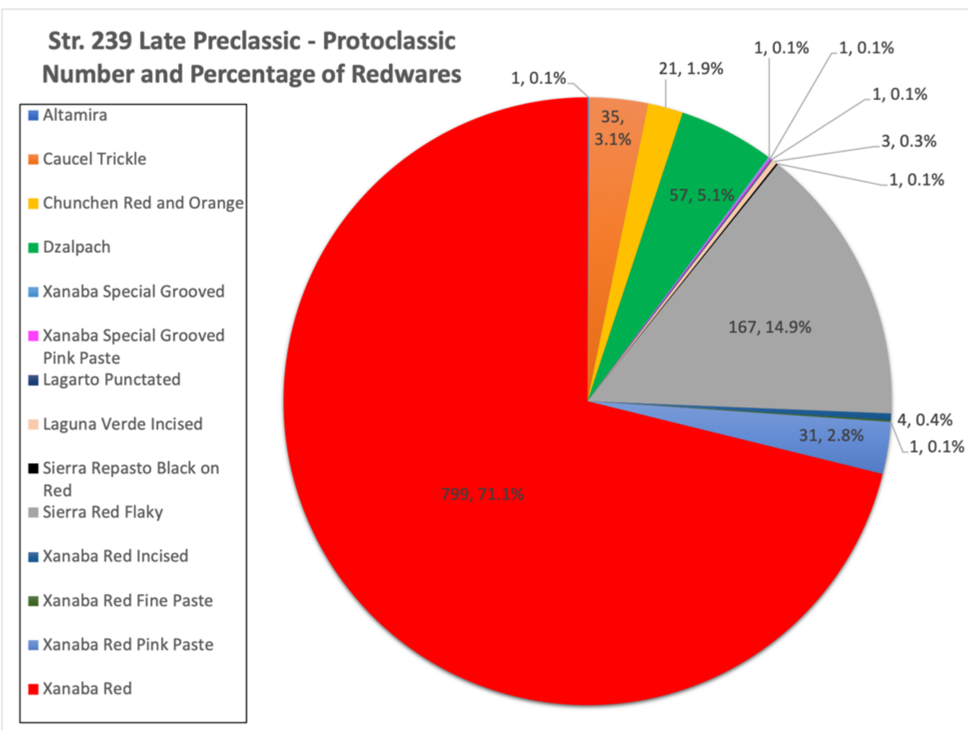

Figure 7.33. Pie chart of counts and percentages of different redware varieties found at Str. 239.

Nonetheless, there seems to be a decrease in QOL at all three households during the Early Classic period. While many contexts have Protoclassic bichromes and redware varieties, the number of these ceramics in association with Early Classic orange glosswares or polychromes is few (e.g., see also Stanton 2000; Glover and Stanton 2010:69). Yet both households at Str. 239 and Str. 65 managed to negotiate access not only to these orange glosswares and polychromes, possibly as gifts from elites since the frequencies were so few. They also both had access to Becoob tecomates, which are placed firmly in the Early Classic at nearby Izamal (Quiñones 2006:58). The only other structure that had access to Iberia or Aguila, was Str. 92, which was the local seat of power, flanked by stucco masks associated with kingship, ancestral veneration, and rebirth (Estrada-Belli 2006; Freidel 2005; Salazar Lama 2015). These highly-valued ceramic gifts were imperative in the poltico-economic process of forging alliances, building a network of reciprocal obligations, and reifying hierarchical relationships (Foias 2007), likely as Izamal was spreading its influence across the Northern Plains. Not coincidentally, both of these households managed robust Late Classic assemblages and elevated social distinction during this subsequent period, while Str. 132 was wholly abandoned during the Early Classic.

Labor Investments in Platform Construction

As mentioned previously in Chapter 2, architectural investments serve as a proximate variable for labor mobilization and a variety of other social networks held within the finished product. By the Late Preclassic, architecture is one of the most noticeable materializations of differential access to resources and labor; it is social differentiation for the household par excellence (Hendon 1999). As a style, megalithic architecture would have helped to integrate people on a regional scale (Huston 2012; Kidder 2017), yet it would also require significant coordinated labor inputs; knowledge of quarrying, extracting, shaping, and carrying; and would be made much easier by lithic technology. The material nature of megaliths would also facilitate the formation of subjects through coordinated, dialogical action that would have forged closer bonds among labor groups (Hutson and Davies 2015).

In El Mirador, an area in the Southern Lowlands with a similar megalithic tradition during the Preclassic, megalithic stone production was specialized by the Late Preclassic and included the use of various lithic technology including elongated "picks" and axes (Hansen et al. 2018:165). In the greater Puuc area, which includes a high-quality lithic source at the site of Xichmook, at sites like Poxila and Xocnaceh, there are also massive megalithic constructions that date to the Middle Preclassic (Gallareta Negrón 2018; Ringle et al. 2014). Given the near absence of formal stone tools during the Late Preclassic at Ucanha and the greater Ucí region, stone masons would have had a more difficult time procuring limestone megalithic blocks, perhaps even relying on silicified limestone as raw lithic material (Dahlin et al. 2009).

Experimental archaeology done at El Mirador found massive limestone blocks (roughly 1.4 m to 95 cm x 45 cm x 45 cm) could be produced at a rate of two to three blocks per week per person and around 11 hours to quarry, remove, and shape a block (Woods and Titmus 1996). Workmen also carried large blocks—246 to 300km—on a litter in teams of eight to ten (with two to four people stabilizing the blocks) for 600 m in 17 to 19 minutes (Hansen et al 2018:165). Given the average megalithic stones found in domestic contexts along the UCC were smaller (roughly 75 x 50 x 25 cm) and not as nicely finished, these blocks would have been around 0.1 m3 and would have weighed 150 to 200 kg. At Uxmal, similar experiments estimated 950 kg of stone transported 250 m in roughly five hour (Erasmus 1965). Erasmus (1965) also calculated it would require 5.25 person-days (pd) per cubic meter of fill and 12.25 pd/m^2 for masonry walls wherein a day equals five hours. Joseph Stair's (2014) study of the megalithic style at Uci, Aké, and Izamal, which derives labor costs from Eramus and Arnold and Ford's (1980) study of construction costs at residences around Tikal, uses estimates of wall construction as perimeter*height*7 pd per square meter, fill construction as volume*5.25 pd per cubic meter, and perishable superstructures as area*1 pd per square meter. Since dating perishable superstructures is not clear and these labor inputs are not that great, they will not be considered.

As mentioned in chapter 5, residential platform volume during the Late Preclassic was unequal as evidence by a Gini score of 0.469, which is slightly lower than mean Gini score of 0.57 as seen amongst intensive agriculturalists in non-urban settlements (Smith et al. 2010). It can be difficult to exactly pinpoint construction volumes through time; however ceramic evidence overwhelmingly dates Str. 132 to the Late Preclassic and all three structures had basal platform walls done in the megalithic style. Using 5.25 pd/m^3 as an estimate for construction fill inputs, the number of five hour person-days are as follows: 1,978 pd for Str. 132 (376.88 m3), 4,051 pd for Str. 239 (771.75 m3), and 5,250 pd for Str. 65. Even so, the size of fill stones varied between these structures. Comparisons of profile drawings from trenches show many of the fill stones from Str. 239 were megalithic in size (roughly 65 x 45 x 25 cm)l; therefore, the act of filling would have also required dialogical labor, which have strengthened social bonds among members of this household.

Estimates for wall perimeter construction are more difficult because only small portions of the basal platform wall were exposed at Str. 239; yet, a planimetric map of Str. 65 (Figure 7.2) shows megalithic rocks forming nearly a complete perimeter. Some of these megaliths are blockier and less “pillow-shaped” but still convey the idea of megalithicness and were massive stones (Figure 7.34). A planimetric map of Str. 132 (Figure 7.23) shows incomplete sides either as a product of recycling stones used for modern albarradas or due to unfinished construction in antiquity. Profile drawings give a rough estimate of perimeter wall height. If the exterior megalithic wall (80 cm tall) completely surrounded Str. 239 (21 m x 21 m), then it would have required 470.4 person-days to erect. Str. 65 with a perimeter of 105 m and an average exterior megalithic wall height of 85 cm would have required 624.75 person-days to completely encircle. Finally, with a perimeter of 83 m and an exterior megalithic wall height of roughly 35 cm, Str. 132 would have needed 203.35 person-days to enclose; however, as seen today roughly 50% of the platform has megalithic retaining stones so this estimate would be 101.68 person-days.

Figure 7.34. Large “megaliths” from eastern basal retaining wall of Str. 65 / Op.11

The megalithic architectural style in the greater UCC area attests to the appreciable amounts of labor investment during the Late Preclassic. Mathews and Maldonado (2006:95) argue that this type of shared architectural style developed as an institution through an informal exchange network by the elites occupying different sites in the Northern Lowlands. As opposed to other parts of the Northern Lowlands, such as the Yalahau region (Glover and Stanton 2010; Glover 2012), this style of architecture cross cuts social stratification at Ucanha and was part of how elite and nonelite people “came to express and materialize themselves as intelligible subjects” (Hutson and Welch 2014:436). As one collaborator has argued elsewhere (Hutson et al. 2012), the material construction of these megalithic blocks would not only require a number of social networks (i.e., capabilities) to be allowed access to limestone quarries, to procure the tools to quarry the limestone, and to get someone skilled at stonemasonry, but the actual physical construction of moving these massive blocks would require a synchronized, dialogical movement that would intensify bonds and trust between co-workers. Thus, the construction of domestic platforms would have augmented not only quality of life but also mirrored more varied interpersonal interactions inherent in the monumental construction of Ucanha albeit at a more a localized level.

Nevertheless, labor inputs and social networks as manifested in megalithic construction were not evenly distributed across Ucanha. Both households at Str. 239 and Str. 65 had greater ability to mobilize labor, than did the people of Str. 132. Given the compelling evidence for feasting at Str. 239, it is likely some type of collective work event was useful to mobilize labor. At Str. 65 there is less evidence for feasting, yet the overall labor inputs are some of the highest for non-monumental architecture.

Conclusion

While discussions of Late Preclassic life at the household level in the Northern Lowlands have been envisioned as less hierarchically ranked than their Southern Lowland counterparts due to lack of clear-cut prestige/exotic goods (e.g., jade, obsidian blades, spondylus shells), there were noticeable differences in the diversity of household assemblages; labor inputs in architecture; and resource mobilization seen in events like feasting or the discard of large amounts of ceramics. The household occupying Str. 239 during the latter half of the Late Preclassic not only had access to a vast range of ostentatious goods from a variety of locations across the Maya world, they also had the ability to mobilize labor through larger-scale feasting practices. Feasting was a common payment for collective work parties in prehistoric times, especially for households that were able to command a surplus of resources and parley this surplus into labor and social prestige as a good host (Dietler 2003; Dietler and Herbich 2001; Wells 2007). Unsurprisingly, this household also had significant labor inputs with regard to architectural investment and was able to withstand the Early Classic, a time when other households were abandoned at Ucahna. While no burials were found at Str. 239, the high Terminal/Protoclassic ceramic concentrations interspersed with faunal remains in a similar light brownish-gray strata at the base of the basal platform attest to this household’s ability to mobilize and discard significant ceramic resources.

On the lower end of the household QOL spectrum was Str. 132. Although it was located near an ecological resource—a rejollada-that could have afforded a place of intensive agriculture, this rejollada was not utilized or the agricultural surplus was not reinvested back into the household. Since there was an institutionalized rulership present, it is possible this surplus was tribute payment, an economic practice that was common during the Late Preclassic and helped fund monumental constructions and other communal endeavors (McAnany 2010; Potter and King 1995). This household also had much less ceramic diversity and lacked Early Classic imports from the Peten seen at the other two structures. While members of the household were able to muster labor to extend the platform, the overall labor investments were much less than either Str. 65 or Str. 239. Given that this household had fewer capabilities and overall less wealth, it was not able to weather the tide of the tumultuous Early Classic and was abandoned. Unlike the other two structures investigated, it did not rebound during the Late Classic.

CHAPTER 8: HOUSEHOLD AND COMMUNITY (DIS)INTEGRATION

"The nasty little secret of history is that states and empires are very fragile, volatile, and transitory far more so than their buildings and monuments. They are a fluid process rather than a durable thing, and they depend upon constant hard work in the micro-political struggles of negotiation and legitimation to survive and operate." Michael Dietler (2003:271-272)

As Dietler notes, the success of a state or even a community cannot survive on grandiose monumentality or coercion alone. Social relations need to be monitored. There is a balance between elite machinations and commoner wellbeing, between collectivism and autocracy, and between coercion and legitimacy. Studies dealing with quality of life look at how individual, household, and community scales intersect with access to wealth and capacities. These intersections involve relations between subjects and objects in ways that formulate wellbeing both in as embodied knowledge and discursive choices. It is myopic to base ideas of wellbeing and happiness solely on material culture as passive barometers of wealth; therefore, the capabilities component of quality of life is important because it strives to analyze how networks of subject and object interactions afford the ability to live well together, to meaningfully engage in community. Since the construction of quality of life is relational—consisting of differential access to resources and instantiated by subjects with differentially formed dispositions—the ways in which wellbeing is lived can have internal contradictions and can be contextually minimized or magnified. Daniel Miller (1989:65) writes of subjectification as a form of:

> "dominance… whose internal structural contradictions may be resolved, but rather it is a lived condition which works through an often precarious balance between various forces of coercive-legitimatory, collectivist-individualist, structural-calculative, practical-representational natures, which may always threaten to break down into the relative autonomy of their constituent parts unless agents act in furtherance of the maintenance of the present actual or apparent cohesion."

That is to say, successful political entities strive to meet a standard of acceptable quality of life for the populace through the creation of opportunities that reify the lived community and through economic and subsistence opportunities. It is here in the maintenance of quality of life that ideas of the moral economy (Scott 1976) and moral authority (Houston et al. 2003) coalesce. Critical to this balancing act is the acceptable ways in social distinction could be cited in the Butlerian sense. Perhaps more lavish displays of wealth were acceptable if they were done so in social contexts that included a broader audience and paid homage to a faceless generalized idea of ancestral pasts, as was common in Maya iconography and performativity during the Late Preclassic (McAnany 1995). However, when these social distinctions became more individualized, especially at the household level, did this transgress a tacit, embodied understanding of moral economics? Therefore, one major goal of this project was to address the question:

(1) What was the degree of social distinction among households from the latter half of the Preclassic to the beginning of the Early Classic?

Household Distinctions and Quality of Life

Architecture

One of the most immediate and visible avenues of social distinction is architecture. Social archaeology has stressed the importance of residential architecture, especially as an active entity that informs identity, daily practice, and provides opportunities for citations of norms (Fowler et al. 2015; Hendon 2010; Hutson 2010; Robin 2003). For the Maya this intimate relationship between residential dwellings and the formation of social distinction was even more salient because houses were living entities on the landscape. This underscores the importance of how social differentiation and perceived wellbeing emerges from the relations "between different persons, persons and groups, different groups, the living and the dead, and people and objects, since personhood is not confined to living human beings" (Gillespie 2001:75). For example, among the Tzotzil the door of the house is referred to as the *ti'na*, or "house mouth" and the thatch roof is *holol* or "head of hair" and similar terms are found in a variety of Mayan languages (Stuart 1998). Additionally, this bodily replication in naming is extended to multiple levels of entities such as fields, mountains, and tables that also have "mouths", "heads" and other anatomical parts (Vogt 1969:580). From this picture emerges a network of human and nonhuman actors, hybrids of nature-culture (Latour 1993), in which experiential understanding of "bounded" entities does exist as places that are cosmologically ordered. Since personhood was distributed among a network of people, places, and things, the animated Maya landscape would have been a daily arena for negotiating social differentiation.

Investment in residential dwelling as wealth is a key proximate marker for household quality of life (Feinman et al. 2018; Smith 1987, 2015; Smith et al. 2018). Numerous approaches to wealth begin by looking at architectural elaboration insofar as it indexes the ability to mobilize labor and resources (Abrams 1994; Carmean 1991; Guderjan et al. 2003; Tourtellot et al. 1992). At sites like Sayil (Carmean 1991; Tourtellot et al. 1992) and Copan (Hendon 1991) the degree of investment in superstructures, roofs, walls and the like generally grade form all-stone, finely cut veneer stones to completely perishable structures. The houses with the highest quality building supplies probably also required more labor and therefore they index greater economic wealth. Relatedly, larger domestic structures typically correlated with larger households, which, in turn, were seen as a manifestation of greater wealth in agrarian societies (Netting 1982; Rathje and McGuire 1982; Tourtellot 1988; Wilk and Rathje 1982). With the exception of the Popol Nah (Str.92cSubIV), which was likely not a residence, none of the residential architecture at Ucanha had walled-masonry superstructures, and the only example of these aforementioned embellishments was the presence of megalithic stones hewn with varying degrees of skill. Therefore, outward signs of social distinction at Ucanha were relatively homogenous and not overtly pretentious.

Gini scores, which measure the degree of equality in the distribution of a good, have been one method used in Mesoamerica to quantity labor investment as an indirect measurement of household wealth (Brown et al. 2012; Chase 2017; Feinman et al. 2018; Hutson 2016; see chapter 5). From a sample of residential platforms at Ucanha that dated predominately to the Late Preclassic and had megalithic style walls that formed basal platforms, the Gini scores for volume were 0.48 and for surface area were 0.38. In the Valley of Oaxaca during the Late Formative (Preclassic), where Art Joyce (2008, 2009) argues an appeal to moral authority and communalism was the glue of social cohesion, Gini values for house size (i.e., surface area) was 0.25, which was "much lower than for any index (architecture of artifacts) pertaining to the Classic period" (Feinman et al. 2018:277). While living area and volume at Ucanha was a bit more unequal than the Valley of Oaxaca it was roughly equal with Late Classic Maya sites such Palenque and Dzibilchaltun. Ideally Gini scores would come from sites that were occupied a relatively short time and/or from the complete uncovering of architectural groups whereby an archaeologist could date different construction phases. Nevertheless, wealthier households who build larger houses in the past typically have larger houses in subsequent generations as a result of inheritance strategies and developmental cycles (Tourtellot 1988).

Therefore, while some social distinction was manifested through architecture at Ucanha during the Late Preclassic, I believe these differences would have been rather subtle. Survey data indicated that the largest dwellings also incorporated the megalithic style of architecture (62 of the 76 largest dwellings were megalithic). As mentioned previously this style of architecture was found in vernacular and monumental contexts throughout Ucanha and throughout the region; therefore, it was a material statement that would have been encountered while walking through Ucanha and even further afield in other cities along the UCC. As such, this style of architecture would have become "unmarked" over habitual encounters; it would have faded into the background as the "humility of things" is wont to do. Much like the intersite causeway itself, which was arguably constructed as a materialization of community pride as a political boundary, the ubiquity of the megalithic style would have reified an identity of "symbolic egalitarianism" (Chase and Chase 2009) wherein a common citation of architectural form smooths over differences.

The distribution of architectural inequality surely impacted how social distinction was encountered on a daily basis. Among urbanism studies in the Maya area, two approaches of the spatial distribution of architectural wealth are usually discussed: 1) the concentric zonation model versus 2) the interspersed model. In the concentric zonation model more elite households lived nearer to the site center with increasingly impoverished households radiating outward. Some larger urban center such as Caracol

(Chase and Chase 2004), Cobá (Folan et al. 2009), and Dzibilchaltun (Kurjack 1974) arguably have wealth distributions that conform to concentric models. Nevertheless, numerous other urban centers (e.g., Chunchucmil, Sayil, Mayapan, Tikal, and Copan) lacked clear areas of concentrated wealth wherein only households with similar quality of life would be encountered on a daily basis (Hutson 2016a). That is to say, sites with higher wealth inequality as measured by architecture dispersed this inequality throughout the site. By interspersing wealth differences throughout a settlement, encounters of households with different qualities of life would likely be more frequent than in a concentric zonation model. Recent understandings of the lived landscape of cities provide compelling arguments that increasing the frequency of diverse socioeconomic inter-subjective interactions bolsters quality of life and resiliency. Indeed, this is the core of New Urbanism, which consciously promotes these types of encounters, while also providing more open communal spaces for subjectification (Katz 1993). Hutson (2016) argues by utilizing ideas present in New Urbanism, sites like Chunchucmil were able to mitigate the conflict inherent in overt citations of wealth by having rich and poor living in close proximity to one another.

While Ucanha during the Late Prelassic was a small city at best, and nowhere near an urban center like Chunchucmil or Caracol, it was rapidly being more populated and becoming more densely occupied. Along the UCC, Ucanha was the most densely populated site with roughly 189 households per square kilometer (Hutson and Welch 2014:Table1), making neighboring statements of architectural wealth all the more visible. Statistical analysis indicated no correlation between size of a platform and distance from the center, thereby arguing against the idea of concentric zonation. However, the north transect had a low negative correlation between platform volume and distance from the Central Plaza (Pearon's r = -0.38) meaning households able to mobilize more labor were located nearer to the site core albeit through a weak correlation. Of the 11 platforms that dated mostly to the Late Preclassic and were used to construct Gini scores for volume and surface area, there was no correlation between volume and distance from center (r = 0.07, p = .83) nor was there between surface area and distance from the center (r = 0.34, p = .31). Moreover, the largest platform by living area and the second largest by volume that was excavated was located over 830 m north of the Central Plaza at the northern boundary of the site. By interspersing unequal architectural statements of wealth with more modestly sized platforms it is likely that a sense of moral consumption was ensured at least with regard to architectural size. Surely the ability to mobilize labor to construct platforms and megalithic architecture rested in the unequal resources of the house as an inheritance group. The presence of this architectural style in both monumental and domestic contexts underscores Sewell's idea that the transposibilty of schema into new contexts is a foundational component of agency. Whether or not it moved from monumental to vernacular uses is in some sense moot because over time megalithic architecture become incorporated in the proper way to cite intelligible statements of architectural identity (Hutson 2012). This style united citations of architectural expectations through similarity, but also divided through (un)skilled execution and the amount, which was a proximate measure not only of wealth but also household capabilities to mobilize social networks towards specific goals.

Patron-Role Feasting and Covert Corveés

The Late Precalssic and into the Early Classic was a time of great demographic, social, political, and economic change across the Northern and Southern Lowlands. In both of these areas, changes in ceramic form and surface embellishments mirror the need for social differentiation at the more intimate level of eating, which can be a politically-charged endeavor that simultaneously integrates and divides people (Callaghan 2013; Fox et al. 1996; Glover and Stanton 2010). Mostly notably the explosion of ceramic heterogeneity across the Northern Lowlands during Preclassic to Classic transition, including the appearance of bichromes with a variety of aesethically-pleasing surficial attributes and new forms, was catalyzed by the "growing populations attempting to differentiate themselves in a social environment marked by increasing stratification" (Glover and Stanton 2010:72). As discussed in Chapter 2, one particularly salient variable of social differentiation would be feasting.

Results of horizontal excavations provided compelling evidence for feasting at Str. 239 during the latter half of the Late Preclassic. As outlined in Chapter 2 (Table 1), Rosenswig (2007) states four categories for identifying feasting in the archaeological record—facilities, food preparation, food presentation, and food consumption. Archaeological features, faunal remains, and ceramic assemblages from Str. 239 meet all four of these categories. As discussed in Chapter 7, Str. 239 showed evidence for:

1) facilities (distinct hearth or cooking area)
2) food preparation (boiling pots and fire cracked rock)
3) food presentation (fancy dishes, platters, and jars as well as large vessels with distinct class sizes [as seen in bimodal distribution of rim diameters])
4) food consumption (distinct species [deer and turkey] and cuts of meat).

In addition to these lines of evidence, there was also a stratum with similar texture (fine silt) and color (grayish-brown) at the same level as the oven feature and thick pure ash deposit associated with it that covered areas at least four meters to the east and south. In the profile around this oven feature and other places down at this level in Str 239, this stratum existed and then on top of it was a layer of large fill stones, many over 50 cm in length that compromised a major raising of the platform. Within the fine, grayish-brown stratum ceramic concentrations were two (or more) standard deviations higher than the ceramic concentration total of the site, indicating massive deposits of ceramic. Finally, many of the sherds around and in this oven feature—as well as in other locations where this fine, grayish-brown stratum were found—were large and refittable suggesting the intentional breaking of whole vessels, an act commonly associated with feasting (McAnany 2010; Spielmann 2002). The presence of bimodally distributed serving vessels and the large amounts of ceramic discard indicate feasting for a larger audience (Potter 2000; Wells 2007).

Recent understandings of feasting, largely based in practice-oriented theories, have focused broadly on identity formation and the mobilization of resources/labor through the guise of communalism. First and foremost, feasts mark boundaries of inclusion and exclusion and are therefore critical to the formation of identities in ancient societies (Dietler 2001). As those (e.g., Dietler 2001, 2003; Mills 2002) dealing with identity and feasting have rightly pointed out, these identities are multifaceted and constantly negotiated around social constructs such as gender, age, class, etc. As such, feasts are "an instrument of both domination and resistance, as an arena for the symbolic naturalization, mystification, and contestation of authority" much like community-level performances (Dietler 2001:71). Thus, the process of consumption is ritualized in the arena of the feast, making statements of taste, status, morality and the like. In this sense, although this is somewhat caricaturizing, larger feasts can dupe the masses as if morality and communalism were just some extension of hegemony (in the Gramscian sense). This shared "sincere fiction" as Dietler (2001:75) claims, citing Bourdieu, places attendees in a position of un-repayable debt, which he classifies as the patron-role mode of feasting.

These unrepayable debts are clearly manifested in collective work events, such as the work feast, wherein in labor is given through the guise of communalism in exchange for hospitality and a memorable social experience (Dietler and Herbich 2001). As Wells (2007) has demonstrated, the work feast has great time depth in Mesoamerica: from modern faenas and colonial ferias to Prehispanic Fiestas the appeal to a moral obligation through the covert corveé of the feast has been a primary method for mobilizing labor and subtly making statements of social differentiation. Of critical note is these work feasts should feel voluntary. Unlike some hinterland areas along the Ucí-Cansahcab causeway that had lower amounts ceramics (Hutson and Davies 2015), nearly all households at Ucanha did have access to a variety bichrome and redware ceramics; therefore, the ceramic assemblage at Structure 239 would have felt (literally) and looked somewhat familiar to both hosts and guests alike. This similarity of embodied interactions would have helped assuage overt statements of social differentiation to some degree, yet the sheer diversity of the bichrome and redwares as discussed in Chapter 7 would have impressed upon attendees their inability to payback this feast with the same material grandeur. While statements of social distinction are being made, they are done so through familiar material culture. In other words, these citations of wealth do not transgress some tacit moral economy, and, as a result, provide a comfortable material background that affords garnering labor. Nonetheless, the "humility of things" as passive backdrop would emerge as a "marked" encountered given this context of commensal politics providing a moment of discursive reflection, which reiterates the dialectical nature of human-object identity formation (Dietler 2001:69-70; Joyce 2011:164).

The ability of the household at Structure 239 to muster economic resources, such as ceramics and fauna associated with more elite populations (e.g., deer and turkey) would also attest to its elevated quality of life. Food choices would have been particularly powerful statements. Turkeys, possibly domesticated (Thornton et al. 2012; Thornton and Emery 2017), and deer, likely domesticated and hunted (Emery 2003; White et al. 2001), would have provided reliable food sources for more elite households and were particularly significant symbols of natural power. Deer, for example, embody natural elements such as the sun and rain and are associated with renewal ceremonies, such as the birth of the year and political inauguration (Pohl 1981; White et al. 2001:93). Turkeys were also an ideologically salient food source. In Classic period iconography and epigraphy, turkeys were depicted as elite co-essences or *wahyis* (Figure 8.1), which gave the "capacity of some human beings to transform themselves magically into an animal or a natural phenomenon" (Cueva and Villalobos 2016:19). In later Postclassic codices, the turkey was depicted as a messenger of divine will (Cueva and Villalobos 2016:21). Finally, ethnohistoric accounts from De Landa (Tozzer 1941:144) mention how New Year ceremonies were accompanied by the sacrifice of a turkey. Thus, food choices help frame feasts "as the media of expression and commensal hospitality constitutes the syntax in the context of a ritual of consumption…because they are 'embodied material culture'"

(Dietler 2001:72). The consumption of ideologically-charged food not only imbue these items with symbolic capital, it would also manifest the social, economic, and political resources inherent in being able to procure these foodstuffs and serve them at a scale necessary for a successful work feast. Both the consumables and durables (ceramics) attest to an elevated household quality of life, which would have been portrayed through the metaphor of communalism as a means to socially differentiated the inhabitants of Structure 239 from neighboring households.

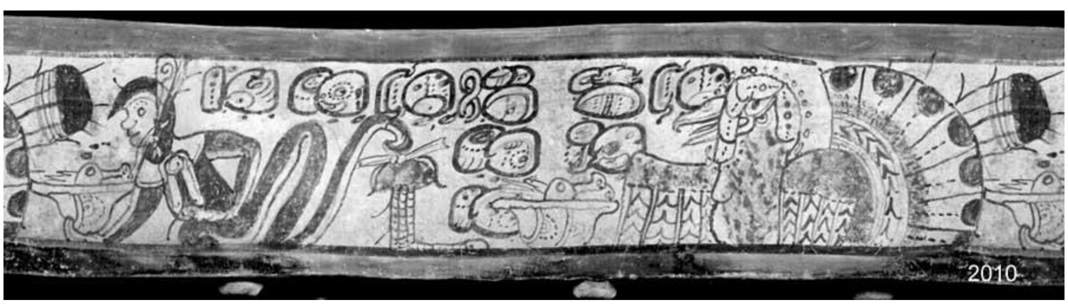

Figure 8.1. Images of turkeys depicted as wayhis on Late Classic vessels.

From Smith's application of quality of life, acquiring a vast number of durable portable goods and mobilizing labor investments to the tune of several thousand person-days—if this platform was mostly built during the Late Preclassic, which architectural style and ceramic evidence suggest—would manifest this household's wealth. In no other contexts, either from test-pitting or horizontal excavations, did the project encounter such high densities of Late Preclassic ceramics in a discrete lens. The physical tangible objects clearly attest to wealth.

Another component of quality of life is a household's capabilities or "freedom to pursue…wellbeing" (Deneliln and McGregor 2010:507) and "reference the degree to which a person can…participate in community activities or achieve a level of literacy to participate in political life" (Smith et al. 2018:24). Smith confines capabilities to materialistic iterations such as diversity of possessions and external social networks. As he argues (Smith 2015:491), "all houses have ceramic serving bowls, but some have a richer collection of categories of bowls (in terms of form and/ or decoration) than others. Whether the diversity of possessions is measured in the stylistic or functional realm…higher levels of artefact diversity point to a higher QOL". While concepts borrowed from quality of life studies do not always easily map onto archaeological phenomena, I argue archaeologists can use these concepts to try and quantify ideas of wellbeing that move beyond the materialization of wealth that include components of social engagement. As seen in Chapter 7, Structure 239 had the greatest diversity of both bichromes and surface-treated redwares. Some of these ceramics were produced elsewhere and were likely procured through some form of marketplace exchange (see below), so clearly external social networks were present. Since the construction of quality of life, and capabilities especially, is inherently relational, I argue the work feast would not only mark the capabilities of the host but those of the attendees as well because this event would reify reciprocal obligations and provide opportunity for supra-household interactions. If work feasts were voluntary and accepted based on the moral standing of the host and their ability to provide a feast through material assemblages that were intelligible and did not overtly make statements of vertical hierarchy, then this experience would have reinforced “living well together” wherein society and the individual are copacetic.

Nevertheless, feasts are contradictory and events where this “covert corveé” and naturalization of euphemized hierarchy can be reaffirmed, contested, and mocked (Dietler 2001, 2003), just like larger-scale performances meant to reinforce social cohesion through the narrative of the state or leading group (Inomata 2006a; Scott 1985). The feasting assemblage found at Structure 239 was a on scale where it was likely that it could not be fully repaid by the attendees, which is a key facet of Dietler’s (2001) patron-role feast as a work party feast. Much like the moral community but at a smaller, localized scale, the patron-role feast establishes attendees as providers of labor and possibly resources and marks hosts as providers of spectacle and sociality; in both there is relational construct of obligation bound by morality and not coercion or threat of real or symbolic violence. However, by the asymmetrical nature of this relationship, the seed of factionalism is planted and as economic and political landscapes shift—as seen with the introduction of gifted polychromes and rise of centralized authority—the inherent rifts can reach a breaking point.

In sum, only Structure 239 provided convincing evidence for feasting. This is not to say other households did not engage in feasting during the Late Preclassic. Surely others did. For example, Structure 65 had a number of Protoclassic ceramic wares, such as Ixcanrio Orange Polychromes with an Easter-basket style handle) and the highest count of Shangurro bichromes (one of which had a mammiform support). The presence of Ixcanrio, found solely in elite contexts, is a widely distributed hallmark of Brady et al.'s (1998; see also Reese-Taylor and Walker 2002) Protoclassic and has been associated with renewal ceremonies (Reese-Taylor and Walker 2002:104). Furthermore, Reese-Taylor and Walker (2002:105) argue widespread attributes of these Protoclassic ceramics (e.g., mammiform supports or the presence of Ixcanrio Orange Polychromes) "reflected attempts to renew alliances and reinvent a larger social order" vis-à-vis the sociopolitical tumult surrounding the Terminal Preclassic. Callaghan (2013:335) argues these types of flashy pottery used during diacritical feasting "would have represented a major innovation in competitive feasting," which would have been a broader component of greater stratification witnessed during the Terminal Preclassic. Thus, it is possible Str. 65 also had feasting albeit on a smaller, more exclusionary scale (something that might approximate Dietler's [2001] diacritical feast). It is interesting to note that the inhabitants of Structure 239 also had access to later facet orange-slipped Protoclassic polychromes, including Aguila Orange and Dos Arroyos Orange, both of which were imports from the Southern Lowlands as well as the largest assemblage of Early Classic polychromes at Ucanha. These polychromes show the elevated social distinction and quality of life of the household at Str. 239 indeed continued into the Early Classic whereas Str. 65 had a much smaller Early Classic polychrome assemblage. Perhaps the overt displays of wealth and more exclusionary strategies of Str. 65 were less effective than the appeals to communalism of the patron-role feasts of the household at Str. 239.

Diversity of Household Assemblages

During the Late Preclassic in the Northern Lowlands, ceramic spheres become more regionally heterogenous compared to the Middle Preclassic as five distinct regional ceramic spheres emerge (Glover and Stanton 2010:65-67; see Figure 8.2). This shift is seen as the outcome of increasing social differentiation that typically accompanies demographic booms and new political institutions, both of which are emerging across the Northern Lowlands at this time. Both at the regional and inter-household scales, the emergence of visually-charged ceramic diversity underscores the ability of symbolic communication to be a fulcrum of social differentiation (Blanton 1995). The performative nature of these ceramics is conducive to making statements that cite household QOL. This ceramic heterogeneity provides a useful framework to analyze household wealth but also capabilities as defined by Smith as assemblage diversity within an artifact class. As discussed in Chapter 2, capabilities are a key component for household quality of life and these capabilities are intimately tied to constructions of identity, both as encounters that afford interactions with different social networks and as materials that recursively form subjects in meaningful ways. During this time period the construction of roadways, megalithic architectural styles, and distinct ceramic spheres all suggest regional identities via materiality were important political strategies of social cohesion and integration.

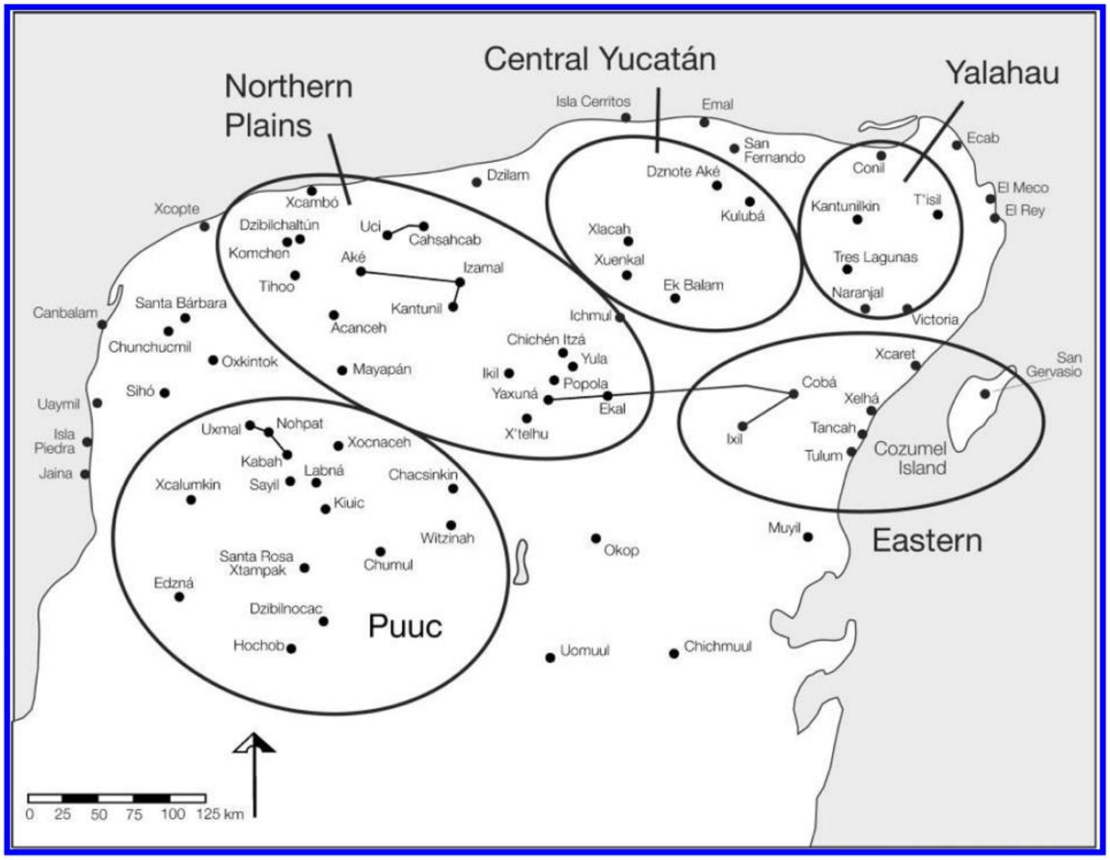

Figure 8.2. Map of five ceramic spheres across the Northern Lowlands that emerged during the Terminal Preclassic. Map from Glover and Stanton 2010.

These social distinctions and negotiations of identity and wellbeing are constantly and most intimately (re)produced at the household level (Ardren 2015; Bourdieu 1979; Hendon 2010; Hutson et al. 2004; Robin 2003). For example, differential access to ceramics produces social distinctions that become so routinized they become embodied. Indeed, in the greater UCRIP project area, Huston and Davies (2015) have argued some hinterland households had relatively small amounts of pottery, probably using “soft technologies”, such as baskets or gourds, to consume food, whereas as other more elite households in the area had ceramic wares and likely held feasts, a material difference that would surely be impressive to those soft technology households.

Comparing the distribution of bichromes from sites across the UCRIP project area (i.e., Ucanha, Ucí, and the hinterland area known as 21 de Abril) is instructive for seeing if these embodied differences indeed existed across settlements. As discussed in Chapter 5, access to fancy bichromes was relatively equal at Ucanha with many households having several different types of bichromes. Of the eleven households test-pitted and having ceramic assemblages with greater than 15 sherds dating to the Late Preclassic, 45.45% had Carolina, 81.82% had Dzilam and Huachinango, and 90.91% had Shangurro. The average number of different bichrome varieties was 3.27. Including all 36 contexts investigated at Ucanha, 19.44% had Carolina (n = 14 sherds or 0.118% of all Late Preclassic sherds), 41.7% had Dzilam (n = 136 or 1.2% of all Late Preclassic sherds), 52.8% had Huachinango (n = 457 or 3.9% of all Late Preclassic sherds), and 50% had Shangurro (n = 936 or 7.920% of all Late Preclassic sherds). At Ucí, of the 18 contexts excavated in 2016 had at least 15 sherds dating to the Late Preclassic excavating in 2016, 27.8% had Carolina (n = 8 or 0.2%), 50% had Dzilam (n = 23 or 0.7%), 61.11% had Huachinango (n = 33 or 1.0%), and 72.22% had access to Shangurro (n = 433 or 1.3%), patterns which closely approximate those seen at Ucanha when including all contexts. The hinterlands investigated between Ucí and Kancab also had access to Late Preclassic bichromes. When removing architectural compounds that had less than 15 sherds dating to the Late Preclassic, as seen in Table 8.1, households in the hinterlands also had roughly equal access to Shangurro, although East Coast bichromes were not as widely distributed in the hinterlands. Therefore, it appears the major centers along the UCC, both of which were competing with one another to attract followers, provided fancy bichromes from regions to the east, such as Ek Balam and the greater Yalahau region, and provided

Shangurro wares made locally. It is interesting that Shangurro is consider the quintessential “Protoclassic” iteration of the Northern Lowlands (Brady et al. 1998)—and by extension a more “elite” ware—yet it was so widely accessible.

Table 8.1. Percentages of structures that had access to bichrome ceramics during the Terminal Preclassic at sites throughout UCRIP. Only structures with 15 sherds or more were included.

	Carolina (% of contexts with access)	Dzilam (% of contexts with access)	Huachinango (% of contexts with access)	Shangurro (% of contexts with access)
Ucanha (n =11)	45.45%	81.82%	81.82%	90.91%
Ucí (n = 18)	27.78%	50%	61.11%	72.22%
Hinterlands (n = 12)	0%	0%	41.76	83.33%

While some of these raw counts might be low, the diversity of bichromes at Ucanha is greater than at other notable sites in the area with Late Preclassic occupations. At Komchen, for example, Late Preclassic bichromes were largely absent with only five sherds of Dzilam and one sherd of Huachinango recovered from the entire site (Ringle 1985:1182). At Ek Balam East Coast bichromes (Huachinango, Dzilam, and Carolina) are a marker for the Manab Ceramic Complex, yet there appear to be no signs of social hierarchy with regard to architectural investments (Bond-Freeman 2018). Based on high counts and technological and surface treatment variations, Bey et al. (1998) argue Huachinango was produced at Ek Balam and used until CE 500, yet not a single sherd of Shangurro was recovered from Ek Balam. In the Yalahau region to the east, Late Prelcassic assemblages are 85% are Sierra, Carolina, and Tancah (Glover and Stanton

2010). Due to the high frequency and diverse forms of Carolina, Glover et al. (2005:24) argue this bichrome was produced within the Yalahau region towards the end of the Late Preclassic.

Elsewhere in the Southern and Northern Lowlands, the introduction of polychrome ceramics has accompanied political changes that undermined social cohesion and lead to depopulation (Ball 1978; Glover and Stanton 2010; Grube 1995). As Glover and Stanton (2010:68) note, "The Classic period polychrome tradition may reflect gifting of finely made pottery, likely produced by specialists attached to palace complexes." In the Yalahau region there are low counts of Early Classic polychromes: only seven of the 35 sites had Timucuy (n = 91 sherds) and only three sites had Dos Arroyos Orange Polychrome (n = 4 sherds), likely imported from Belize (Glover and Stanton 2010:67). At Komchen, Early Classic polychromes—Timucuy and Aguila—number less than 50 sherds and compromise less than 0.2% of the overall assemblage. At the inland site Yo'okop, located to the southeast of Ek Balam, ceramic types change abruptly with an influx of Aguila Orange, Dos Arroyos, and Tituc polychromes, since the site functions as a "middleman" in a "Petén Corridor" (Johnstone 2005). The types of Early Classic polychromes at Ucanha were more diverse, including Dzidzibachi, Tituc, Timucuy, Aguila, and Dos Arroyos; yet, they were distributed in highly unequal ways and were sparse. As mentioned in Chapter 5, the Gini score for access to these was 0.851, which indicates unequal access, likely through new economic distribution networks (see below). Only Structure 239, which had the highest quality of life during the Late Preclassic, had access to all five of these different Early Classic polychromes. From these five polychrome groups, a total of 151 sherds were found throughout all of Ucanha.

The degree of social distinctions seen at structures that were more intensively excavated—Structures 65, 132, and 239—continues from the Late Preclassic into the Early Classic. Str. 239 yielded 60 sherds of Early Classic polychromes, while Str. 132 only had one and Str. 65 had 13. As mentioned in Chapter 7, Str. 239 also had a sizable assemblage of Early Classic utilitarian wares, such as Saban Becoob, indicating a continued occupation while much of the site was depopulated. Str. 65 had access to a diverse array of foreign ceramics—the highest count of Flor olla sherds; a sherd from an Easter basket-style form of Ixcanrio—as well as the highest number of Shangurro sherds recovered from a variety of forms, including sherds from a tetrapod support. No other household had either this form of Ixcanrio or Shangurro. The external connections materialized in ceramics from Str. 65 stretch across the Maya world (e.g., Hauchinango from Ek Balam [Bey et al. 1998], Ixcanrio Orange Polychromes, and Flor cream wares form the Peten and Campeche [Sierra Sosa et al. 2014:226; Quinoñes 2006]) and attest to the elevated capabilities of the inhabitants of this structure.

Other items typically found in household assemblages among the Maya were only found in small numbers. For example, obsidian blades (n = 2) were only found at one test-pit operation (Op. 24 / Str. 546), a platform that had a robust late Early Classic ceramic assemblage. From intensive excavations at three architecture groups (Str. 65, 132, and 239) only a total of 20 pieces of obsidian was found. Of these twenty pieces, only five are associated with Late Preclassic contexts. Shell, likely only a short distance from the coast 20 km away, was only found at four architectural compounds. Typical prestige items of the Late Preclassic and Early Classic—jade, pyrite mirrors, spondylus shells—were not recovered from any households. Evidence of household religious practices—figurines—or a robust domestic economy—spindle whorls; bone needles; worked beads, shells, stones; salt production—were also absent.

Therefore, beyond fancy ceramics, household assemblages were seemingly modest. This modesty afforded few capabilities if the presence of diverse assemblages approximate the ability to pursue other economic interests (Smith 2015). Thus, the pooling of labor and/or intermittent crafting, that can supplement economic wealth and stitch together social networks of embedded indebtedness (Hagstrum 2001; Hirth 2009; Sheets 2000), thereby increasing capabilities, were absent or are not detectable in Late Preclassic to Early Classic life at Ucanha. In the absence of artifacts associated with economic capabilities, social distinction was minimized. Clearly there were no archaeologically visible occupation-based classes at Ucanha during this period (cf. Adams 1970; Becker 1983).

Intermediate Regime Building: Between Collective and Autocratic

Comparing architectural volume and living spaces with the ability of households to procure more diverse household assemblages typically positively correlate (Smith 1987). At Ucanha, where comparing dwelling volume with percentage of bichromes of overall Late to Terminal Preclassic ceramics, there is indeed a moderate positive correlation ($r = 0.64$, $p = .035$). Likewise, comparing living area with percentage of bichromes produces a moderate positive correlation ($r = 0.68$, $p = .021$). Thus, it appears larger households who could mobilize more labor also had higher percentages of fancy ceramics. However, when comparing the number of different bichrome varieties present at a dwelling with living area ($r = 0.38$, $p = .24$) and volume ($r = 0.50$, $p = .12$), the correlation is negligible and not statistically significant. This absence of correlation suggests that larger households who could mobilize more labor did not have greater ability to procure bichromes from a number of different producers. In other works, there was no correlation between wealth (as architectural size) and capabilities (as the ability to access diverse social networks as seen in diverse assemblages). As will be discussed below, this distribution of numerous different types of bichromes at differ wealth-grades of dwellings has implications for economic distribution.

To summarize, during the Late Preclassic, Gini scores of architecture at Ucanha were 0.48 for volume and 0.38 for surface area. The Gini score for the presence of different varieties of fancy ceramics was a low (0.1), yet sherd counts suggest some households had more fancy ceramics than other (Gini score of 0.44). Thus, while nearly all households had the capability to procure diverse ceramic assemblages, there were wealth discrepancies between households. This accessibility to fancy ceramics during the Early Classic becomes much more curtailed as the Gini score for *access* to different varieties of polychromes balloons to 0.85.

In an attempt to compare Gini scores, Kolher et al. (2018) place scores on a continuum of autocratic-to-collective regimes as constructed by Blanton and Fargher (2008). An autocratic state provides few public goods or opportunities for public interaction, allows the rule of elites or individuals to go unchecked, and unequally distributes economic goods—all of which undermine household wellbeing. In a collective regime the opposite is true, and the state collects taxes—as labor or goods or both—in ways that are funneled back into the community thus enhancing household quality of life, both as capabilities and wealth. Kohler et al. (2018:Figure 11.5) found Gini scores from Maya city-states with kings (Tikal and Caracol) to be the highest—between 0.48 and

0.65—whereas more collective regimes (Teotihuacan and Herculanuem and Pompeii) had lower Ginis—between 0.37 and 0.52. Interestingly, Kohler et al. (2018) also identify an "intermediate" regime-building strategy—defined as a Gini scores between roughly 0.28 and 0.42—for a number of New World sites, including Formative San José Mogote and numerous Postclassic sites (e.g., Yautepec, Mayapan, and Tenochtitlan). New World societies clumped more into "intermediate" than did Old World Societies (which were more "collective") with the exception of the previously two mentioned Maya "superstates" (Martin and Grube 1995). These New World intermediate regimes (n =7) had a mean Gini score of 0.33, while more autocratic regimes had a Gini score of 0.48—although only two Gini scores (0.62 for Tikal and 0.34 for Caracol) were included in this sample; the mean Gini for collective states was 0.12 and only consisted of Teotihuacan (Kohler et al. 2018:Table 11.3). Clearly there is some overlap between the Gini scores for these different regime strategies; the means of Gini scores for autocratic states (0.48), intermediate states (0.33), and collective states (0.12) can serve as starting point for analyzing how differing distributions of wealth map onto governing strategies and the realization of the state.

Placing the Gini scores of Ucanha in this continuum gives an average architectural score of 0.43 and a fancy ceramic score of 0.27, which would give an overall average Gini of 0.35. Since finding the geometric mean of Gini scores across multiple units can produce a Composite Archaeological Inequality (CAI) index, which can more accurately measure inequality (Oka et al. 2018), I used these Gini scores from ceramics and architecture to quantify a CAI. If the Gini score for access to varieties of fancy ceramics—which is solely a presence or absence quantification—the CAI for Late

Preclassic Ucanha is 0.30. If access to varieties of fancy ceramics is not included, and only raw counts of fancy ceramics from test-pitted households are used to find the composite geometric mean, then the CAI for Ucanha is 0.43. Regardless, a composite score of 0.30 to 0.43 falls securely within the intermediate range for Mesoamerican states (Kohler et al. 2018:Table 11.3). The presence of a possible Popol Nah, indicating some type of corporate rule, and the subsequent construction of stucco masks associated with kingship bolsters the interpretation of Ucanha as an intermediate state along this autocratic-collective continuum. A similar political reorganization of moving from corporate "faceless" ancestral worship to individualized divine kingship at Yaxuna also happens form the Late Preclassic to the Early Classic (Stanton and Freidel 2005); however, Yaxuna continues to flourish during the Early Classic (Suhler et al. 1998) whereas Ucanha and other monumental sites along the intersite causeway decline.

Community-Level Interactions and Prosperity

Another major question of this project is whether or not community-level interactions were an important component of social cohesion. That is, what did Ucanha offer people that perhaps the hinterlands or other neighboring sites did not? As discussed earlier in Chapter 4, during the Late Preclassic, Ucanha and Ucí were micro-polities vying for political power. In the face of this increased regionalism in conjunction with growing populations, those working in the Northern Lowlands argue recruiting and retaining migrants would have been a key source of political prowess (Bey 2006; Ringle 1999). Working within historically acceptable citations of community morality, emergent leaders "used ideology not to oppress but to integrate, creating centers as places or pilgrimage and ritual procession" (Bey 2006:29). Yet, the use of mat symbolism on ceramics from Ek Balam, sculpted figures from Loltún Cave, and buildings from Ucanha all indicate the idea of centralized authority and possibly kingship were developed by the Late Preclassic (Bey 2006:30). Ucanha from the Late Preclassic to the Early Classic strives to maintain a balance of collective strategies while more “autocratic” or exclusionary practices, such as kingship and gifting economies, begin to form. Thus, the second major question of this project was:

(2) Were community-level interactions that helped build social cohesion during these two periods present? If so, did they change?

The frequency of face-to-face interactions among people within a settlement is an important component of community. The more frequent and the more diverse of the subjects meeting in these encounters, the more likely a generalized sense of trust will develop, which can perpetuate civic engagement and social cohesion (Uslaner 2000). This process of intersubjectivity (re)produces rules and norms through a dialectical interaction with the material objects that frame these encounters. An important component of social cohesion is human sociality. Mead (Mead and Miller 1982) argues sociality, which is the capacity of humans to enter the perspective of another human being, helps forge a sense of self, but also morality. This dialogue of sociality, of stepping outside one’s self, also applies to material objects most-critically through use or engagement. Here the reality of the thing emerges in contact experience whereas the object in-and-of-itself invites us to action (McCarthy 1984). In several ways, Ucanha’s built landscape and economic systems during the Late Preclassic created and maintained this sociality.

Site Layout, Processions, and the Central Plaza: Building Polis

Intra-site sacbeob aided social cohesion during the Late Preclassic and appear to be more ritually important since they connect large platforms or other architectural features. Interestingly, the hieroglyph for road (*bih*) is the image of a quincunx (Stuart 2006), an icon that has structural depth in Mesoamerican symbol systems for a center of great supernatural power that began time and the universe (Reilly 1995; Schele 1995). At neighboring Ucí a series of six intra-site sacbeob connect larger platforms to a centrally-located plaza. At the site of Komchen, a sacbé, whose construction dates to the Xculul phase (150 BCE – CE 150), connects the two largest platforms that had clear ritual functions of community integration (Ringle 1999). In the Southern Lowlands, intrasite sacebeob built during the Late Preclassic at sites such as Cerros, Nakbe, and El Mirador also integrated architectural focal points whose function was ritual but possibly also practical, since the functioned as reservoirs (Cerros) or traversed bajos during the rainy seaons (El Mirador and Nakbe) (Ringle 1999; Scarborough 1991). As mentioned previously (Chapter 4), Ucanha's build landscape consisted of a series of four causeways that extend toward the Central Plaza, thereby metaphorically placing this plaza as an axis mundi and a liminal space; it is simultaneously in the earthly realm AND the cosmological realm as the location of creation (Hutson and Welch 2014; Stanton and Freidel 2005). That fact that the sacbeob at Ucanha do not cross treacherous terrain, do not have a hydrological function, and all terminate in small plazas or courts that are associated with monumental architecture all underscore the ritual nature of their function. They were physically and socially integrative.

But who participated in these integrations? Ringle (1999) argues intrasite sacbeob at Komchen helped to mitigate increasing social differentiation amongst lineages vying for power by including the entire community in processions that expanded from the center in the cardinal directions, thereby bringing the community to life. The movement of people, of bodies, of blood would have enlivened the entire community as chul'el, which is the essence that animates a living object (Freidel et al. 1993; Houston and Stuart 1998). Furthermore, sacbeob themselves were envisioned as living umbilical cords (*cuxaan zum*) channeling the cosmic blood of the universe (Bolles and Folan 2001:300; Stanton and Freidel 2005). Given the inherent power of sacbeob, it is possible access to them was regulated by emergent leaders, however. Las Casas ethnohistoric accounts (Freidel and Sabloff 1984:83) from the contact period mention how the Aztecs "'put up considerable resistance when the Spanish wanted to cross a sacbé, although their movement on unpaved streets was unimpeded." The importance of processions and roads have considered time depth as structurally homologous rituals are mentioned in ethnographic (Vogt 1969; Wisdom 1940), ethnohistoric (Tozzer 1941), and iconographic accounts (Ringle 1999:201). These circumambulatory rituals took place during the transition into the new year during the month of *Uayeb*, when leaders, or those capable of mobilizing people and resources, would have controlled the timing of these large-scale affairs. As mentioned in Chapter 2, supra-household face-to-face interactions, such as large-scale rituals, construct a "community" and generates trust, reciprocity, and morality, all critical facets of mitigating conflict. Additionally, moving about on sacbeob would have instantiated a bodily difference compared to walking around on normal ground. As Hutson (2010) has discussed, this interaction with sacbeob would have queued a “discursive walking” and done in the context of large-scale procession would have had a profound impact on social memory as a moment of “coordinated cohesiveness” whereby inclusion in an event lasts longer than just the process. Simply viewing the sacbeob and associated architecture would have evoked that moment, thereby etching that moment of communitas and togetherness across Ucanha’s built landscape. Evidence of centralized authority from the popol nah structure, which, coupled with masked friezes, might indicate kingship or corporate rule, fits well with Houston et al.’s (2003) concept of the moral community wherein large-scale performances and rituals were integral encounters of social cohesion.

Indeed, Ringle (1999:207) believes sacbeob “were in effect extended stages for ritual” that would have demarcated these acts as different. At Ucanha, the Central Plaza and Northern Group, which includes a raised plaza (Str 150) and large pyramid (Str. 151) are connected by Sacbé 2 in a similar fashion (Figure 8.3). Moreover, Str. 149 on the northern border of the Central Plaza would have overseen Sacbé 2 and groups or processions moved between these features on the landscape. As Inomata (2006a, 2006b) has noted, these performances were multivocal and, while they provided leaders the spotlight necessary to reinforce their own exalted, semi-divine social position, they also afforded the audience members moments of enjoyment, critique, subversion, and sociality. As discussed in Chapter 6, the raised, broad, and open construction of Str. 149 could have functioned as a location for performances for audiences in the Central Plaza to the south during the Late Preclassic. Multi-elemental analysis from plaster floors in the Central Plaza showed significantly high concentrations of heavy metals—Cu, Hg, Fe, Ti, and Pb—associated with Floor 2 and Floor 3 located at roughly along the center line of

Str. 147, a monumental structure that forms the western border of the plaza. High levels of Hg, Cu, Fe have been associated with the production red, black, yellow, green, and blue pigments among the Maya (Cook et al. 2006:636), suggesting the use and production of colorful regalia or painting these buildings. Str. 92cSubIV at Ucanha was decorated in powerful red iconography and many other buildings throughout the Maya world show evidence of being painted. Therefore, it is likely colorful displays accompanied rituals in the Central Plaza.

Interestingly, however, Floor 1 lacks significant concentrations of these heavy metals at the same location near Str 147. Indeed, higher concentrations of metals like Ti, Fe, and Hg on Floor 1 are spatially associated with an intrusive Late Classic burial. While Floor 1 dates to the Late Preclassic, these elevated levels of heavy metals likely accompany rituals associated with the burial of an individual. This burial underscores the reconfiguration of space in the Classic period: there is a clear shift from inclusionary collective strategies from the Late Preclassic to a claim of ownership and ancestral property rights by the Late Classic.

Regardless of how "ownership" of monumental space can be contested and can help facilitate domination, works focusing on early monumentality argue these collective construction projects attest to community prosperity and were built as physical testimonies of community identity (Clark 2004; Dillehay et al. 2012; Hutson 2002; Joyce 2008; Ortmann and Kidder 2013; Pauketat 2000; Rosenswig and Burger 2012). It is likely the construction and maintenance of Ucanha's monumental landscape as work provided routinized face-to-face interactions for a diverse group of people that contained a moral obligation. Recent works from the perspective of relational approaches have convincingly argued that early monumental constructions were not coercive projects done for aggrandizing leaders but were collective projects that realized the community and promoted civic pride (Clark 2004; Hutson 2002; Pauketat 2000b; Ringle et al. 2014). These building projects also attest to community-levels of quality of life, or prosperity, thereby promoting capabilities of living well together and possibly creating new social networks beyond the household (Smith 2015). As Clark (2004:67) argues about early civic-ceremonial collective labor projects, these constructions "would have become an exceptional recruiting device for attracting others to the community—its expansive architecture and plazas being the best advertisement of community resources, organization, and wellbeing…as the primary path to community in Mesoamerica appears to have been construction of public and/or sacred locales." These collective work events were likely mobilized through feasting (Dietler and Herbich 2001; Joyce 2008; McAnany 2010:141-143). However, while Ucanha's monumental architecture and causeways would have been salient nodes of social memory for those building them, later generations would not have such an emotional relationship to them. Therefore, maintenance of these areas likely also served as means to promote social cohesion.

Causeways—their construction, use, and maintenance—would have been particularly salient features in which to ground social cohesion and community. As members of the UCRIP project have argued, the ontology of work for the Maya not only reinforced morals and implied reciprocal obligations to the material world, it also had the potential to animate objects. In the Popol Vuh, humans are made through work (Tedlock 1996) and clearing a path or making a road—that is partitioning space into something controlled—created life. The road was a dominant symbol for the Maya, which was epigraphically represented as a quincunx—the axis mundi—but is also read as “work” or “occupation” in colonial dictionaries and marks life events such as death (entering the road) and marriage. Ideal roads were straight (Keller 2009:145)—or *toh* Yucatec, which can also be read as truth or morality (Taube 2003:465). As discussed in Chapters 5 and 7, the quadripartite system of roadways, the Central-Plaza-as-axis-mundi, and associated architecture were all constructed during the Late Preclassic. The act of construction would have promoted community, as Clark discusses above, and their subsequent use would have animated the community through processions.

Additionally, this dedication to work-as-morality likely included sweeping and maintaining roads (and other public places). Analyses of colonial dictionaries show numerous mentions of “sweeping”, including *miz be* (sweep the road) and *miz kiuic* (sweep the plaza) (Bolles and Folan 2001:307). These events were possibly tied to the calendar, and therefore cyclical, as Diego Muñoz Camargo (1981) recounts of the name of the Mexica month *Ochpaniztli* means “sweep the roads.” The term *u matan miz be* refers to parts of a road to be swept by rotating corveé labor groups (Bolles and Folan:307). Therefore, the maintenance of roads and plazas, would have afforded interactions with this sacred space through the rhetoric of work as morality and reciprocal obligation to the community and the animate landscape itself. The multiple replastering episodes seen the Central Plaza and around Str. 151 in the North Group surely functioned as work projects that meant to reinvigorate a shared sense of community. Chemical compositions of plastering episodes at Piedras Negras indicate rotational labor groups in the upkeep of monumental architecture (Abrams et al. 2012); it would be instructive to analyze plaster samples from the superimposed floors of the Central Plaza to see if similar results were present at Ucanha.

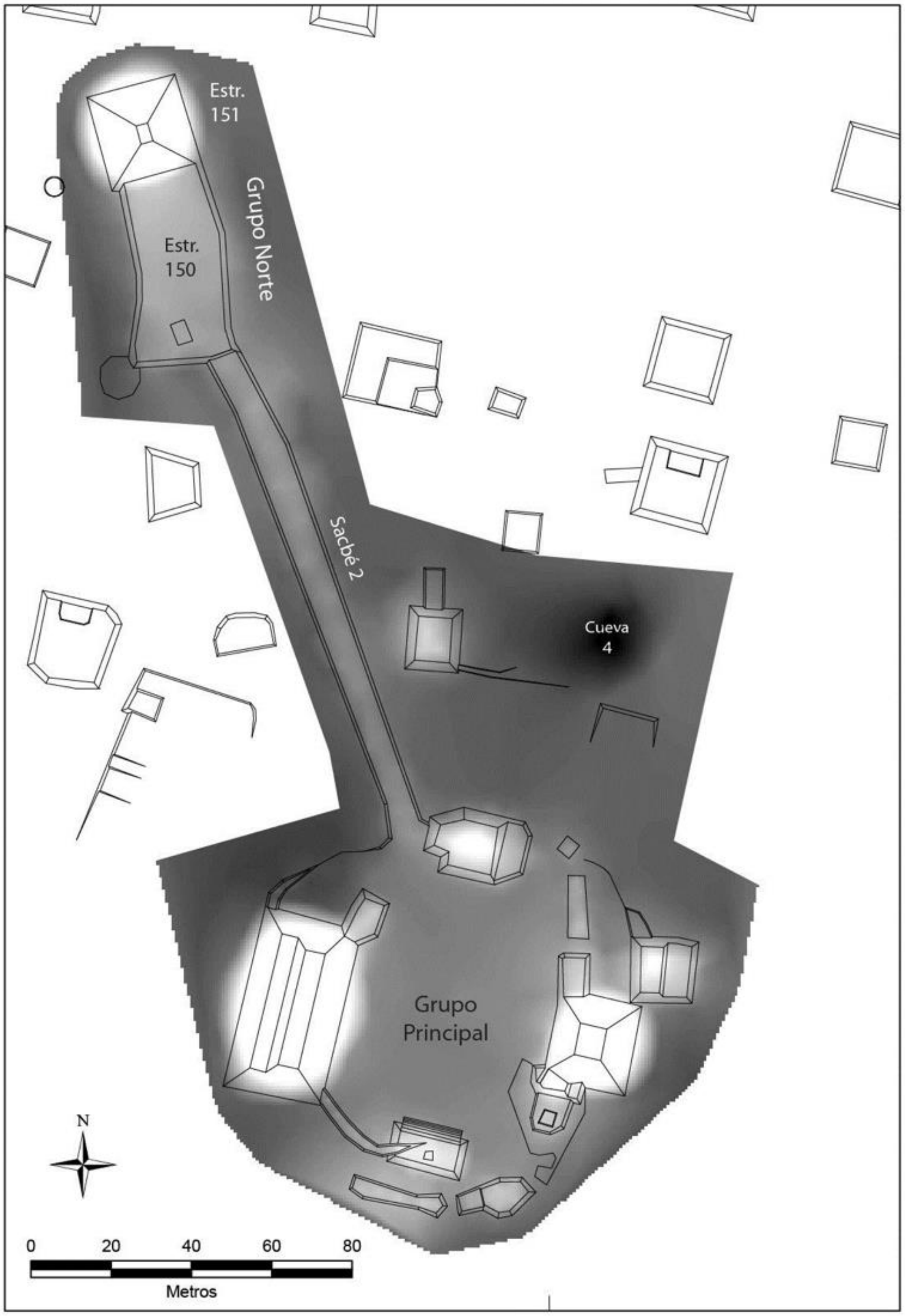

Figure 8.3. Map of Central Group and North Group with Cave 4 shown.

Unique Architectural Organization: A Node of Exclusive Integration

Ceramic evidence from Op. 8, roughly 60 m to the north of Str. 151/Str. 150 provides evidence that social differentiation and integration had points of tension during the Late Preclassic (Figure 8.4). As discussed in Chapter 5, Op. 8 (Figure 8.5) consisted of a 1400 m^2 plaza that was formed by architectural groups that included two structures (Strs. 229 and 230) with megalithic staircases and a 4 m tall pyramid (Str. 231), which is the largest non-monumental structure by volume (1152 m^3). Str. 229 also had a vertical megalith placed at the southeast and southwest corner. This arrangement of vertical megaliths flanking a megalithic staircase is the same configuration seen in Str. 155, which forms part of the southern boundary of the Central Group. The configuration of this group is unique at Ucanha whereas other architectural compounds consisted a single, broad platform. Access to this group is limited and not connected to a sacbé.

Although excavations were minimal (two test pits) and ceramic sherd samples were not very sizeable (n = 215), the ceramics recovered exhibited interesting trends. The ceramic assemblage recovered here overwhelmingly dates to the Late Preclassic (83.33%), consists of many aesthetically-engaging wares (bichromes and other surface treatments), and has the lowest ratio of ollas to service vessels at Ucanha (0.2:1; *z-score* = -1.54). While no faunal remains were recovered, the absence of food preparing artifacts (e.g., manos, metates, hearths) coupled with this high ratio of serving vessels evidences a more elite area where food was produced elsewhere (Turkon 2004:237). The fact that Late Preclassic ceramics from Op. 9 were reversed, exhibiting a high ratio of ollas to serving vessels (5.63:1, *z-score* = 2.43) indicates that the degree of food preparation tasks differed across Ucanha during this period. This differential involvement would have been a source of social distinction, wherein a group of people can appropriate another group's labor and utilize it for exclusive repasts (Dietler 2001; Hendon 2003; Turkon 2004). Attribute analysis was only completed on two rim sherds (both Xanaba Red) due to poor preservation, but both were from cajetes with outcurving or everted thickened rims that would have highlighted food contents and one rim had a diameter of 46 cm, which is significantly larger than the site average ($\bar{x}$ = 29.96, s = 7.528). Although the sample size of ceramics that underwent attribute analysis from this area is small, this large Xanaba cajete and preponderance of serving vessels are both indicative of more elite feasting ceramic assemblages (Turkon 2004:237).

Even the few sherds from ollas present indicate this ceramic assemblage was visually appealing. While only 22 sherds from Late Preclassic ollas were found, only two were from unslipped types (Chancenote). Other ollas present were from diverse varieties (Tipikal, Shangurro, Unto, Xanaba Incised) that would have added to the visual display of serving liquids. When comparing the percentage of unslipped ollas from all excavated contexts and removing any that did not have any Late Preclassic ollas, Op. 8 had significantly more slipped ollas (z-score 2.39 for percentage of slipped ollas) than any other context at Ucanha. The only other context with a statistically significant presence of slipped ollas was Op. 4, which was the pyramid group that formed a small plaza at the terminus of the southern sacbé. This assemblage of ollas is, therefore, markedly different in an architectural complex that is unique.

The overtly aesthetic ceramic assemblage coupled with with Op. 8's imposing architectural background would have been an impressive material display for those in attendance. The large megalithic staircase and vertically set stones, a four-meter-tall pyramid, and lavish ceramic display in an intimate plaza would have likely enchanted participants. As Gell (1992) argues, the grandiosity and technical prowess instantiated in objects can mesmerize people in ways that have magical effects: the diverse array of varieties and forms would not have only been visually appealing but would have also indexed the capabilities necessary to procure items from nonlocal sources as well as mobilize labor and skilled masons to construct the architectural backdrop. The use of cuencos, or restricted orifice bowls, from both local (Xanaba) and nonlocal (cream-slipped Flor from the Central Lowlands [Quiñones 2006]) ceramic types would have added to this display since this ceramic form was only found at this location. Social interactions with this material assemblage and the breadth of capacities contained therein—ceramics, stone, unique architectural arrangements—would have underscored the social distinction of the hosts but also the attendees, who were privileged enough to have access to this space. Since the context of use and material objects present are critical components of identity, the activities that transpired at Op. 8 indicate social differentiation began to take more exclusionary (or vertical) forms that integrated more elite members of Ucanha, which would have contradicted on more the public narrative of appeals to communalism.

Of final note, studies of the Late Preclassic political landscape in the Northern Lowlands argue the emergence of elite factionalism is represented in architectural groups and would have threatened social cohesion (Bey 2006:29-30; Ringle 1999; Stanton 2000). At the site of Yalbac in Belize, Lucero (2007) argues the presence of multiple temples indicates factions within the site attempting to attract supporters. Therefore, another interpretation of the architectural group that makes up Op. 8 is that the household(s) responsible for its creation were also instrumental in the construction of Str. 151, Ucanha's largest pyramid, which was only 50 m to the south (Figure 8.4).

Thus, while faunal evidence is missing, ceramic evidence and the relatively private architectural configuration of this "plazuela" group would make Op. 8 a prime locale for a diacritical feast (or at least some diacritical ritural). As discussed in Chapter 2, this mode of commensal politics reinforces vertical social differences by naturalizing status. While this mode of feasting typically includes high-status food (e.g., chocolate among the Maya), this component may be substituted by architectonically distinguished settings that frame these elite interactions (Dietler 2001). Thus, I argue that places on Ucanha's built landscape did indeed facilitate community formation and social cohesion; however, other places, such as Op. 8 and Op. 19/Str. 239, integrated smaller subsets of the Late Preclassic population in ways that marked them as socially distinguished. Interestingly, these two operations were only 75 m from one another, which could indicate a relationship of labor and food mobilization between these architectural compounds.

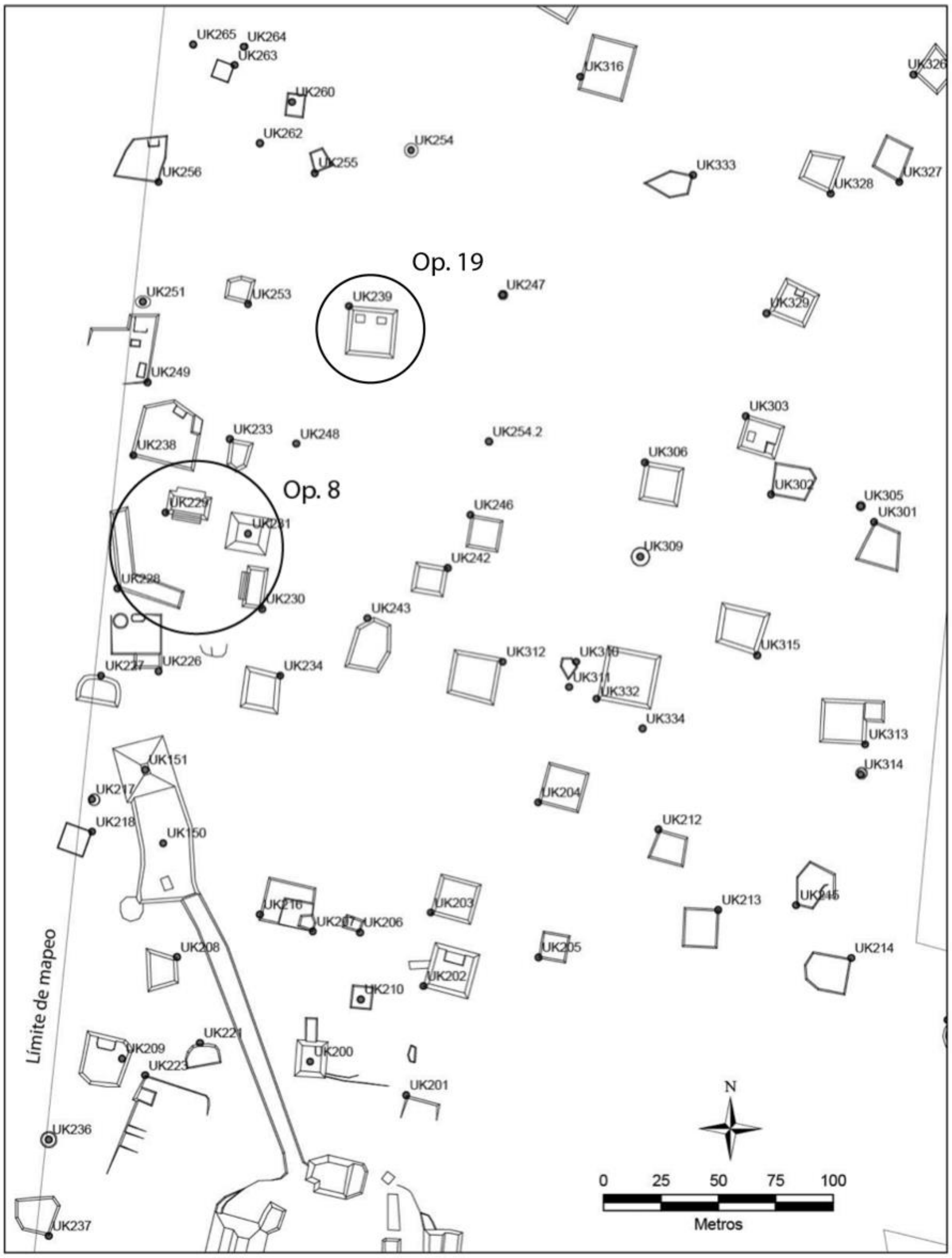

Figure 8.4. Map of northern part of Ucanha showing Op. 8 and Op. 19 in relation to one another. Op. 8 appears to function as a backdrop to Str. 151 (UK151) and its associated raised plaza (UK150).

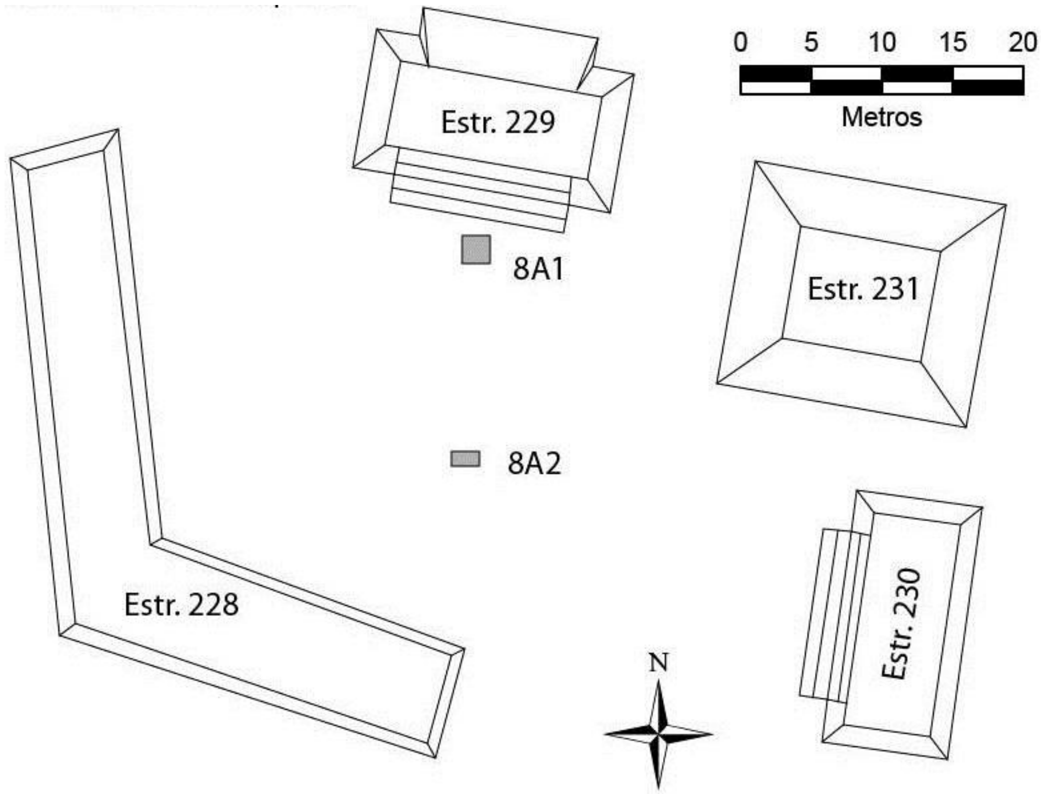

Figure 8.5. Close up map of Op. 8 showing location of test pits and associated architecture.

Supra-household Economic Distribution and Social Interactions

Ancient Maya economies have been arguably a mix of vertically-oriented centralized control of production and distribution (sometimes referred to as political or institutional economy) in conjunction with a more horizontally-oriented decentralized domestic economy (Demarest et al. 2014; McAnany 2010; Potter and King 1995; Scarborough and Valdez 2009; Sheets 2000). Patterns of distribution can be gifting, redistribution, market exchange, and reciprocity to name a few. One of the economic systems operating above the household level is market exchange through a marketplace. Market exchange is where people are aware of changes in supply and demand through word of mouth, prices, or other means (Garraty 2010:5-6). As mentioned in Chapter 2, market exchanges in the ancient world would have been embedded meaning “pricing” would be negotiated through the lens of ensuring long-term interpersonal relationships and a tacit understanding of moral obligations (Garraty 2010; Polanyi 1957; Scott 1976; Wilk and Cliggett 2007). Notably, “[i]n premodern market systems, moral codes and unwritten rules of behavior may have been vital for marketplace development, especially where political oversight was weak or absent” (Garraty 2010:25). While market exchange has been documented for the Classic Maya, the presence of fully-formed market exchange, which by some definition includes some standardized form or currency, has been argued to exist in the Late Preclassic (Freidel and Reilly 2010; Reese-Taylor and Walker 2002), yet its demonstrability through archaeological evidence is more tenuous. Nevertheless, the presence of some institutionalized leadership at Ucanha indicates the duties of moral authority would likely also carry over into the realm of economics and distribution negotiations.

The terms market exchange, marketplace, and market system can be conflated, so it is imperative to define them. Market exchange refers to an economic system of exchange that can include bartering, “need not be predicated on media of exchange or currency”, or exchange through some standardized media of currency where forces of supply and demand are visible, most likely through word of mouth in premodern societies (Garraty 2010:8). This definition of market exchange is broad and “…by this definition, probably occurred widely in the past and long predated the advent of formal marketplaces and market systems” (Garraty 2010:6) A marketplace is defined as a physical location in which market exchanges occur. Marketplace exchanges can occur in the absence of a market economies (Garraty 2010; Hirth and Pillsbury 2013) and these exchanges produce patterns within household assemblages. Finally, market systems refer to institutionalized economies wherein marketplaces at different spatial scales are connected and where products and commodities are easily transferred across these interregional scales (Garraty 2010:10). Importantly, market exchange and marketplaces can exist in the absence of market systems.

Most notably, Hirth's (1998) distributional approach is a useful heuristic to identifying marketplace exchanges, which he states can be directly measured be the degree to which households of varying rank and wealth can still procure items. That is, households throughout a settlement would have access to goods with differences in distribution being the result of purchasing power and not predicated on sumptuary laws or social relation to ruling families, as is seen in redistribution. As Hirth (1998:456) argues, "households of low rank should have access to the same range of low-cost utilitarian goods as households of high rank." He uses this approach together with the configurational approach—which identifies physical places where supra-household exchange could have occurred (e.g., such as centrally located plazas connected by roadways)—and the contextual approach—which includes the presence of urban features such as full-time craft specialists—to show further lines of evidence for identifying marketplace exchange. Commenting on Hirth's distributional approach, Smith (1999:529) argues the absence of sumptuary laws (i.e., control of access to goods by elites) is another important facet of marketplace exchange: "Although elites had greater quantities of certain kinds of goods, they did not have exclusive access to any of the artifact categories recovered in excavations." Thus, if certain commodities—ceramics, obsidian blades, worked shell—appeared in nearly all households, excluding perhaps the most impoverished, throughout the site, this pattern of distribution would indicate marketplace exchange.

Returning to Late Preclassic Ucanha, the site layout with a series of sacbeob approaching the Central Plaza and radiating directionally to other smaller plazas or "courts" would meet the infrastructural expectations of the configurational approach. Yet, investigations of 27 residential platforms found no evidence of craft-specialization and, with a maximum population of 2,5000 people during the Late Preclassic, Ucanha fails to meet the expectations of the contextual approach. Finally, there is evidence to support marketplace exchange, with respect to bichrome ceramics, that conform to Hirth's expectations of the distributional approach. While goods like shell and obsidian were not evenly distributed throughout the site, access to bichrome ceramics was relatively evenly distributed throughout the site. Indeed, a Gini score of access to different bichromes at the variety level during the Late Preclassic was quite low (0.067), indicating relatively equal access to this good. The correlation between distance from the Central Group and percentage of bichromes showed no positive significance ($r = 0.41$, $p = 0.21$) indicating bichromes were spatially distributed across the site in equally. This spatial distribution is another key component of Hirth's (1998) distributional model. As Hutson (in press) has demonstrated, access to bichromes at the regional-level (the greater Ucí area) during this time period was also relatively equal. Given what we know about the various distribution systems of Maya economies and their simultaneous co-occurrence, Hutson has argued the distribution of bichrome wares during the Late Preclassic resulted from incipient marketplace exchange: "Given a fuller range of data from…UCRIP, marketing appears to have played a rather circumscribed role. Nevertheless, this is an important conclusion, as it implies that people…had at least some options regarding how to procure certain goods." The fact that some form of marketplace exchange likely occurred at Ucanha during the Late Preclassic has implications for household quality of life (as discussed in Chapter 2).

Looking at the distribution of Shangurro and so-called East Coast bichromes (Carolina, Dzilam, and Huachinango at Ucanha, Ucí, and in the hinterlands is particularly instructive, especially in light of physical integration via a long-distance roadway. In the New World, and especially in Mesoamerica, which had "the worst transportation system in the ancient world [because] [i]t lacked beasts of burden and had few navigable rivers" (Hirth and Pillsbury 2013:2), roads were an important aspect of infrastructure that facilitated distribution (Chase and Chase 2001; D'Altroy and Earle 1985; Jennings and Craig 2001; Shaw 2008). As Garraty (2010:10) notes, "The concept of market system refers to a regional network of interconnected marketplaces, including the market hinterlands they provision." Late Classic long-distance roadways surely played an important role in developed market institutions (Chase and Chase 2001; Folan et al. 2009; González and Stanton 2013; Shaw 2008). With the rise of Izamal as a regional center and its long-distance sacbé connecting with Aké as well as the Ucí-Cansahcab causeway both in place by the first half of the Early Classic, there was a regional infrastructure in place to move goods great distances. The identification of an Early Classic marketplace and market economy at Chunchucmil (Dahlin 2009; Hutson 2016a) further supports the idea that marketing had its roots in the Maya world earlier than the Late Classic. Calls for the possibility of Late Preclassic markets are growing louder; as Masson and Freidel (2012:479) have argued, "we anticipate that future research will determine that the development of important market exchange arose with the first Maya states of the Late Preclassic era…[and] more focused study is needed on the comparative economies of Preclassic households." While the regional intersite sacbeob were surely multi-functional, the equal access of Shangurro throughout the greater Ucí region suggests these roadways may have served an economic function as well.

As mentioned previously, nearly all households at Ucí, Ucanha, and in the hinterlads between Ucí and Kancab had access to Shangurro. Indeed, Shangurro was found at nearly three-quarters of all architectural compounds at these sites (Table 9.1). Since large quantities of Shangurro were found at Izamal (Burgos Villanueva et al. 2004, 2005; Quiñones 2006) and associated sites, such as Xcambo (Sosa et al. 2014), it is possible this ceramic was produced at a regional center like Izamal. Other comparisons of goods, such as nonlocal manos at Tikal (Masson and Freidel 2013) and obsidian at Chunchucmil (Hutson et al. 2016), that had distribution rates over 75% were arguably moved through marketplace exchange. Given the nature of solar markets in the Maya area, it is possible small-scale market exchange of Shangurro involving Izamal and the greater Ucí – Cansahcab polity were taking shape during the transition between the Preclassic and Classic periods. Like Ucanha, Ucí also had a central plaza with a network of six roadways that would conform to Hirth's configurational approach as well as met Hutson et al.'s (2016:252) criteria for easy marketplace accessibility (i.e., central location, infrastructure that connects central areas to hinterland, and had multiple entrances), although accessibility may have been controlled since this central plaza was flanked by the largest architectural complexes.

While the regional and local infrastructure for distribution and marketing existed at Ucanha and the greater area by the end of the Late Preclassic and some goods (bichrome ceramics) were accessible to nearly all households, other items more commonly associated with market economies in the Maya area (e.g., obsidian, nonlocal lithics, and shell), show no signs of being distributed through marketplace exchange at Ucanha or any other sites on or near the UCC. At all of the sites there is also no evidence of craft specialization or full-time producers that typically accompany institutionalized market economies (Berdan 1989; Hirth 1998; Plattner 1989). Nevertheless, this distribution pattern of bichrome "fancy" ceramics, especially Shangurro, meet the expectations of Hirth's distributional approach suggesting consumption took place about the household level likely in a marketplace. Since Ucanha had centralized leadership in place by the Late Preclassic, the political foundations for managing economies beyond the domestic sphere would have been in place. Furthermore, these economic opportunities would have been a critical component of realizing a leader's moral authority by providing goods to the populace. Not only would access to these bichromes augment household quality of life, it would also become a point of community expectations and reaffirmation of social cohesion.

Patterns from household assemblages at Ucanah indicate access to Early Classic polychromes, however, were unequal, suggesting a shift in economic distribution networks for fancy ceramics. Only six of the sixteen residential platforms test pitted had access to these ceramics; a total of 28 sherds was found. If horizontal excavations are included, then seven out of sixteen had access and a total of 83 sherds was found (60 of which were from Str. 239). More extensive excavations from the palace area of Str. 92

(the area with the Popol Nah) recovered 28 sherds of Early Classic polychromes. The Gini coefficient of access to Early Classic polychromes at the type level was a highly unequal 0.851 (see Chapter 5). This pattern of access amongst households suggests redistribution or possibly gift-giving based on prestige of social familiarity with ruling groups as opposed to a level of general purchasing power that included nearly all households.

Changes to Early Classic polychromes to new distribution networks that were redistributive gifting networks favored status over purchasing power thereby alienating members the population in the process of forging exclusionary networks. Perhaps these displays would be visually noticed by neighbors given the relatively dense settlement at Ucanha and the use of elevated open spaces on residential platforms, where many household tasks would have taken place. Breaking tacit understandings of moral economy through this conspicuous consumption of new wares would have brought materializations of social differentiation to include more vertical distinction thereby threatening social cohesion. Additionally, the curtailing of marketplace interactions would have diminished household capabilities with regard to diversity of possessions of an artifact class, according to Smith's realization of capabilities. Further, I argue it would have negatively impacted capabilities by removing external interactions inherent in a marketplace experience that would have been an aspect of living in a small city like Ucanha that people would have come to anticipate and expect. The introduction of these unevenly distributed polychromes would have also undermined capability as "living well together" Deneulin and McGregor (2010:503) as it would have added unfairly to new materializations of social differentiation.

Conclusion

The transition between the Preclassic and the Classic at Ucanha, and across much the Northern Lowlands, was period of striving to balance ideals of collectivism with realities of exclusionary strategies or more “autocratic” turns. At sites like Yaxuna, monumental constructions that once united the masses through the rhetoric of ancestry during the Late Preclassic become coopted and reoriented as the site is reimagined through kingship during the Early Classic (Stanton and Freidel 2005). Other substantial Preclassic settlements such as Xtobo (Anderson 2011), Komchen (Ringle and Andrews 1988, 1990), Dzibilchaltun (Suhler et al. 1998:Figure 4), Edzna (Forsyth 1983), Yaxuna (Glover and Stanton 2010:69-70) and regions such as the Yalahau (Glover 2012) all experience a hiatus or downturn by the 5th century. Locally, sites like Ucí and Ucanha seem to follow a similar trajectory with a noticeable decline in ceramics securely dating to after what Ancona Aragón et al. (2013) define as the later phase of the “Protoclassic”, which ends approximately in CE 400. Hallmark groups associated with the Yucatan Gloss (e.g., Batres, Maxcanu, Kinich, and Timucuy) wares that mark the early moments of the Classic Period are present Ucanha but in numbers that are significantly lower than their Preclassic predecessors. Concomitantly, hinterland communities between Ucí and Kancab flourished during this period as evidenced by craft production, ritual dedications associated with large-scale constructions, and increased sherd counts of these Yucatan Gloss wares and other Classic period unslipped wares such as Oxil. For example, a hinterland settlement between Ucí and Kancab called Chunhuayum, experiences substantial growth from the first half of the Early Classic to the latter half of the Early Classic (Celine Lamb, personal communication 2019). While only 27% of the structures at Chunhauyum are occupied during the early part of the Early Classic, 82% of structures are occupied by the latter half of the Early Classic as the settlement sees an influx of Yucatan Gloss wares and Oxkintok wares that date to roughly CE 400 – 650. Thus, while there are problems of chronological resolution during the Preclassic to Classic transition (Glover and Stanton 2010), it does seem that Ucanha's decrease in ceramics associated securely with the latter part of the Early Classic (i.e., Maxcanu, Timucuy, Aguila, Batres, Tituc, Balanza, Becoob, and Chuburna [Suhler et al. 1998:Figure 4; Quiñones 2006]) is a real absence as opposed to an artifact of methodology. Ceramics from the Terminal Preclassic (100 BCE – CE 400), which does go into the early part of the Early Classic, define Ucanha's apogee.

These widespread demographic declines occur across the Yucatan Peninsula during this transition from the Preclassic to the Classic with a few notable exceptions, yet their cause remains largely unexplained. Paleoclimatic evidence suggests there was a marked reduction in rainfall during this time period (Hodell et al. 2007); however, the scope of these climactic shifts can be quite localized and patchy (Yaeger and Hodell 2008). Regardless, a further stressed ecological setting marked by sporadic rainfall and water sources would have surely added risk to a growing settlement. As Glover and Stanton (2010:73) note, rapidly changing sea levels during the Late Preclassic might have also impacted coastal sites, presumably impacted ecological resources as well as the reliability of possible sea-faring trade routes. Nevertheless, social dis-integration and population declines are a political process that cannot be adequately explained away solely by external environmental stressors (Golden and Scherer 2013; McAnany and Negrón 2010).

It is informative that Chunchucmil, a densely-populated site situated in a rather difficult ecological setting for an agrarian-based society, reaches its apex during the Early Classic when other sites throughout the Northern Lowlands are depopulated. If indeed environmental variables were causal in the broader “collapse” of many sites in the Northern Lowlands, one would expect a site in an ecologically precarious region to be doomed. Unlike other urban centers in the Maya world, the site of Chunchumil was not centered around the individuals eternally lionized in stone stelae or massive monuments; rather there were a number of quadrangles and sacbeob that connected different neighborhoods within the city. Additionally, the formation of clearly demarcated houselots funneled traffic in predicable routes throughout the city. A centralized marketplace provisioned households with obsidian and other goods. Neighborhoods were a roughly equivalent mixture of poorer and wealthier households who would interact with one another even if only through passing one another. In each of these cases, the lived city of Chunchucmil provided numerous trust-building opportunities through intersubjective interactions beyond the household level on a daily basis. Importantly, these interactions were diverse in nature and frequent. Even though Chunchucmil was an urban settlement with clear social distinctions and variable household qualities of life, it appears that social cohesion and political success were founded upon the constant reaffirmation of a generalized sense of trust through civic interactions and other economic affordances that were not predicated on a shift towards kingship or other more exclusionary strategies as seen elsewhere in the Northern Lowlands.

CHAPTER 9: CONCLUSIONS

"[A]rchaeological data can best be of wider use if presented in such a way as to be useful to other social scientists whose fields may, in turn, have greater bearing on present-day social policies. Our findings can improve the social-scientific understanding of many phenomena, from households to economies, and if we want to have an impact, archaeologists should strive to make our findings known and used by scholars in other disciplines." Michael E. Smith (2015:10)

Introduction

This dissertation examines the relations between household social differentiation and the process of community cohesion. Using a relational approach of how subjects and objects are enmeshed in networks of meaning that form social differentiation, I apply theories from quality of life studies to highlight how aspects of household wealth and capabilities both helped social cohesion and became points of tension during the Preclassic to Classic transition at Ucanha. I argue during a period of microregional integration within a polity, Ucanha emerged as a seat of authority and, as such, this settlement offered new material landscapes that facilitated integration and afforded an overall higher sense of wellbeing: monumental constructions brought people together and memorialized a sense of civic pride; a system of causeways marked the site as a place of creation and animated the polis through ritual processions; a Central Group likely held audiences for performances and economic exchange; and the influx of bichrome ceramics and presence of megalithic architecture became familiar citations of prosperity.

One goal of this study was to analyze the degree of social differentiation between households around the time of the Preclassic to Classic transition. By constructing Gini scores for access to bichrome ceramics and dwelling size, I argue by the Terminal Preclassic households had relatively similar material culture assemblages that provided a lived landscape that afforded integration. Nevertheless, the composite of these Gini scores when compared with other sites from Mesoamerica indicates that Ucanha was transitioning from a collective regime to a more autocratic regime. This is not to say that the site was following some teleological path, rather, citations of social distinction where of the same kind—megalithic architecture, ceramic assemblages—yet were of different scales between households. There were few artifacts (e.g, jade, pyrite mirrors, spondylus shells, or other so-called "prestige" goods) that made overt statements of vertical social differentiation, a phenomenon also noted at Komchen (Ringle and Andrews 1988:193). Thus the interface of subjectification and materiality was mostly horizontal, bonding people together as opposed to hierarchically naturalizing differences (McAnany 2008). Yet reconfigurations of rulership from corporate authority as seen in the Popol Nah structure to more apical leadership as seen in stucco masks, which are intimately associated with the kingship, bolster Ucanha's transition between collectivism and individualism. Architectural compounds with disproportionately high ratios of serving vessels (Op. 8) and disproportionately high ratios of storing/preparation vessels (Op. 9) suggest some unequal divisions of labor where some households could extract labor and resources.

While an appeal to moral economy underscored a broader communalism, Str. 239 provides evidence that Preclassic life at Ucanha was not egalitarian (cf. Ringle and Andrews 1988). High ceramic densities of Terminal Preclassic wares and diverse faunal remains indicate patron-role feasting occurred at Str. 239 showing another way that household quality of life was not evenly distributed across Ucanha. The inhabitants of Str. 239 not only mobilized labor to construct one of the most voluminous dwellings at Ucanha, they also had the highest social capability of any household investigated as instantiated by highly aesthetic and diverse ceramic assemblages that were interred before a significant construction phase of this platform. Bimodal distributions of small and larger serving vessels, many of which were broken in large, refittable pieces, provided further evidence that this spectacle of repast included a number of people beyond the immediate household. The inhabitants of Str. 239 procured the most diverse range of ceramics in the Terminal Preclassic and into the Early Classic, showing their resilience to otherwise difficult times seen more broadly.

Another goal of the project was to see what interactions or features helped to build social cohesion at Ucanha during the Terminal Preclassic. Centripetal forces at Ucanha during this period included 1) collective construction projects, which marked the site as a sacred place and facilitated a sense of generalized trust through inter-subjective interactions beyond the scale of the household; 2) the presence of central authority that was possibly collective in nature and would have provided opportunities to mitigate disputes; and 3) economic provisioning networks included access to a number of bichrome wares from across the Yucatan Peninsula. It is during the Terminal Preclassic that community prosperity, as defined by Smith (2015), reaches its height. By approximately the 5th century CE, however, community prosperity decreases as new materializations of social differentiation, such as polychrome ceramics, become distributed unequally amongst households at Ucanha. Structures associated with centralized authority are interred and deactivated of power at this point, indicating further decline. Some households remained occupied and evidence from Str. 1, a pyramid in the southern portion of Ucanha, shows that claims of political authority were still present. Yet, the lack of Yucatan Gloss Wares and other ceramics that clearly date to the early facet of the Early Classic show that the polis "voted with their feet" and left Ucanha. It is at this time that the hinterlands and other regional superpowers such as Izamal and Chunchucmil flourish.

Broader Contributions

This work contributes to archaeological studies by attempting to understand relational developments of social differentiation vis-à-vis quality of life studies. While it is imperative to define social distinction and manifestations of wealth locally as situated differences (Douglass and Gonlin 2012; Lohse and Gonlin 2007), the use of Gini scores to help quantify equity of distribution and can provide a methodological framework to compare materializations of distinction across time and space. Nevertheless, it would be myopic to reduce identity to material assemblages; rather, material culture bundles meaning in ways that allow social encounters to be more lasting (Latour 2005), and it contains the social networks needed to produce and procure the thing within its self (Robb 2004); it affords possibilities. Therefore, my approach to quality of life includes the idea of "capability", which focuses on how households can pursue citations of identity within a state of wellbeing that includes considerations of social structures and historically-situated understandings of "living well together." The inclusion of capabilities in studies of identity and the negotiation of inequality places a primacy on historical processes as well as tacking between households and community, agency and structure, in ways that incorporate the importance of concepts such as moral authority, trust, and wellbeing during transitional periods in the past. By using empirical evidence to generate a Composite Archaeological Inequality index (see Oka et al. 2018), I hope to provide a quantifiable, comparative for future studies comparing quality of life.

Economic provisioning of the household additionally must be historically situated, since material expectations of quality of life can be met or transgressed depending on political strategies. In other parts of Mesoamerica, as suprahousehold forces shift form a focus on collective appeals of community prosperity towards a more exclusive strategy that fosters inter-elite relations, the polis can react in ways that curtail these shifts (Joyce 2008; Levine 2011). Changes in access to fancy ceramics from rather equitable during the Terminal Preclassic to more restricted by the middle of the Early Classic period mirror this shift from inclusive to exclusive strategies of rule (Blanton et al. 1996). I argue the high accessibility of Shangurro Red-on-Orange wares throughout the greater Ucí polity at nearly every household, regardless of wealth or status, suggests some form of marketplace exchange occurred during the Terminal Preclassic at Ucanha. The physical interconnectedness of the region through roads, the presence of centrally-located plazas, and distribution patterns of Shangurro all indicate that Hirth's distributional model is a powerful heuristic that can help analyze economic interactions in small-scale market exchanges. Early Classic polychromes, on the other hand, appear only in a fraction of household assemblages, which is more characteristic of redistributive gifting economic systems that would have strengthened intra-elite alliances. In several other sites across the Yucatan Peninsula, the presence of these polychromes, mostly notably Tituc and Timucuy, co-occur with new political configurations and population declines (Glover and Stanton 2010). Results from Ucanha indicate a similar pattern where the polis likely felt moral authority no longer provided the economic and social opportunities it once did and privileged new citations of household wellbeing over communal prosperity.

Future Investigations

Ucanha was a Rank III settlement during the Terminal Preclassic with no discernable evidence of craft specialization or domestic economies; nevertheless, it appears to have been a crossroads of sorts. Households were able to procure bichrome wares from the east (Carolina, Huachinango, and Dzilam) as well as bichromes from the west-northwest (Shangurro) with relatively equal access (although gross amounts varied with household capabilities). Interestingly, the widespread use of the megalithic style and the presence of giant façade masks also indicate that migration and/or diffusion from the northwest and the east or southeast. As Ball and Taschek (2007:184-185) have argued, the Nabanche sphere is intimately associated with the megalithic tradition, while the tradition of stucco masks flanking staircases is a hallmark of the Mamon-Chicanel sphere from the southern lowlands. Perhaps Ucanha as well as Izamal, Aké, and Acanceh (all of which have both megalithic architecture and stucco masks) were part of a mutual interaction sphere, or were at the interface of two interaction spheres, by the start of the Early Classic. If ceramics, such as Shangurro were moving through some form of market system from Izamal and distributed via long-distance causeways between Izamal-Aké and Ucí-Cansahcab to sites throughout this interaction sphere, petrographic and geochemical analyses of Terminal Preclassic/Protoclassic wares, such as Shangurro and the numerous varieties of Xanaba, would help elucidate the interrelation between the scope of production, distribution, and consumption. If sites such as Tikal (Hirth and Pillsbury 2013; Masson and Freidel 2013) and Chunchucmil (Hutson, Terry, et al. 2016) were indeed provisioning expansive areas by the Early Classic, then the economic interrelations between Izamal and the greater Ucí area could provide another case for small-scale market systems that helped integrate regional settlements. Preliminary studies at Ucí, Ucanha, and hinterland settlements in UCRIP, as mentioned here in Chapter 8, as well evidence presented by Hutson (in press), argue that ceramic distribution occurred through market exchange in ways that pattern similarly to Hirth's expectations of marketplace transactions. Petrographic and geochemical sourcing data would be insightful for reconstructing the degree of "state" involvement and ceramic specialized production during the rise of these regional polities.

Excavations of monumental buildings, particularly Str. 151, the large pyramid in the North Group, and Str. 1, the large pyramid in the southern part of Ucanha, would provide critical insights into the function of these massive constructions. While Yaxuna favored an east-west orientation during the Late Preclassic and rituals integrated the people through the rhetoric of generalized ancestors, the orientation shifted to a north-south focus as individual kingship emerged (Stanton and Freidel 2005). By the Early Classic sound evidence of kingship is present at Yaxuna (Burial 23 and 24; Suhler et al. 1998:173) providing evidence of a shift from a collective regime to a more autocratic one. Structure 1 at Ucanha, which was associated with the highest percentage of Early Classic polychromes and was constructed after the quadripartite layout of the site was established, is a particularly appealing candidate for a royal tomb. Structure 151, located in the north, a direction arguably associated with the ancestors (Ashmore and Sabloff 2002; cf. Smith 2003) and the location of royalty at Yaxuna, would likely help clarify the nature of centralized authority at Ucanha. Following Lucero (2007) excavations of monumental architecture could also provide an opportunity to assess construction patterns, labor expenditures, and ritual deposits to see if similarly suggested one group controlling monumental construction or if diversity suggested a number of groups, or sociological "houses", built a number of competing pyramid temples.

Past Archaeological Lessons and Current Political Problems

Modern wealth inequalities have been a source of factionalism and conflict most notably with the Occupy Wall Street movement. Yet these inequalities have persisted. At the beginning of 2018, Oxfam International reported that 82% of the wealth generated in 2017 went to the wealthiest 1% of the population, while the bottom half of the population (3.7 billion people) saw no increase in wealth. Similarly, the world population of high net worth individuals (people with US$1 million or more) reached 13.4 million, which is an increase of 59.3% (5.1 million) since the financial crisis of 2008 (Beaverstock and Hay 2016:4). Finally, research done by the Economic Policy Institute, a non-partisan public policy group, shows from 1978 to 2016 CEO compensation has risen on average of 872% compared to compensation for the average worker, which is only 11.2%. These inequalities and their distribution did not arrive fully formed from thin air; we have uncritically inherited their social acceptability and their material basis are embodied in our global systems of production, distribution, and consumption. Pierre Bourdieu (1977:167, emphasis original) highlights the complacency with which we accept economic and political norms and embody these norms as unassailable truths by saying it "*goes without saying because it comes without saying*". That is to say, poverty and inequality are envisioned structurally as given social states rather than *created* historical outcomes based on previous unequal material distributions and laws of inheritance. Many capitalist countries simply cannot envision anything but inequality; its material manifestations surround us and make us. Indeed, we have moralized wealth distributions as manifestations of individual success and diligence in favor of taking an historical lens to looking at material precursors of wealth and hereditary inequality. Neoliberal economic practices have over time—going and coming without saying—become a driving moral force for individual worth (Giroux 2002; Harvey 2005).

Nevertheless, the ability of nonelite actors to shape—not merely be passively impacted by—local elite institutions must be considered in future studies of the development of social inequality. Current political and economic studies show that pronounced social inequality not only undermines trust, it also threatens governing bodies and civic engagement (Kerns et al. 2014; Uslaner 2000). Archaeology can meaningfully add to these current conversations because it provides rich data sets of long-term change on how people negotiate, successfully and unsuccessfully, power dynamics (Flannery and Marcus 2012; Smith 2015). As anthropologists, we are trained to think synthetically, holistically, and relationally to identify patterns and construct explanations or at least interpretations. Collectively, our epistemological breadth, constellations of variables, and scale of interactions have provided us with data sets that can address collapse and resilience across time and space. While using Gini coefficients is not without its problems, work by Michael Smith and others have started the important conversation of quantifying inequality diachronically vis-a-vis various economic systems. Furthering the impact of archaeological datasets, of course, requires involving the public but also public policy in ways that are more applied. Regardless, now, just as in the past, we must approach social inequality from a relational perspective to more fully comprehend the constellation of wants and needs at play and how authority as well as household standard of living is a give and take among all actors

Household archaeology has the ability to generate comparative data sets across time and in differing geopolitical, environmental, and social landscapes that can be used as case studies by disciplines such as political science, sociology, and geography to historically contextualize social inequality and political institutions. This project's focus on how household quality of life was negotiated between rulers and followers creates an opportunity for other disciplines to use a relational approach as theoretical lens to view past power dynamics. The importance of history—how past material culture, communal expectations, political institutions are often transferred from generation to generation in meaningful, yet in non-discursive ways—is an imperative component of this project, and findings from it can serve as a sounding board, a historical example, of how households not only reacted but created change in political systems when wellbeing was (or was not) overlooked.

Increasingly, studies by Michael E. Smith and others (see Kohler and Smith 2018) have collected data from household contexts in order to cross-culturally compare household quality of life across time. From a background of urbanism, these studies highlight the importance of collective trust amongst the citizenry and how polarizing social and economic inequalities undermine the political success of a city whether it be small or massive. Comparing ancient cities from both the Old and New World, Smith and colleagues argue that while many of these collectivities were indeed hierarchal, we currently experiencing social inequality on levels that have not been experienced in the history of urbanism. More importantly as social inequality increases, household wellbeing decreases. By constructing data sets from ancient cities, but also from smaller social collectivities—like Ucanha—archaeologists can add to the discussion about previous experimentations with social inequality, household quality of life, political power, and the like have or have not been successful.

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